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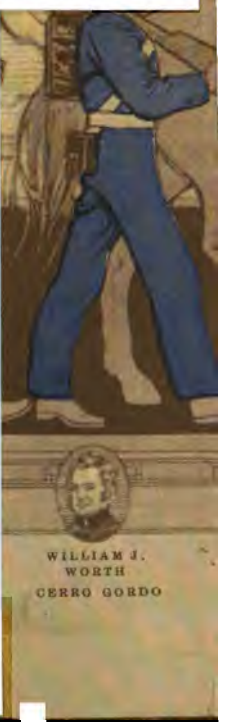

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Volume Three

PRINCIPLES OF MILITARY TRAINING

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Introduction

Trend of Military Training in America

The fight between Cain and Abel was the broth of war, the control of land whether by the practical agriculturist or the peripatetic sheepman, the first and a continuing cause of war, while the chronicles of the Old Testament make the Bible the first of military works and the only one known to most of the early colonists and conquerors of America. There was the comforting and convenient authority for possessing the land and smiting their enemies hip and thigh.

It must be of interest to follow military habits from the early days of our country, when self-defense was that of the individual and his nearest neighbors, to these days of the Great War, and the training of whole nations on the right lines of progressive systems, in vivid contrast to the old routine circle of the professional soldier in the barrack yard.

The early colonists had few professional soldiers among them, and amid the adventures of conquering new homes the few, such as Miles Standish, Captain John Smith, and Sir Henry Vane, were welcomed and made much of, and

with a soldier's instinct each one tried to organize and train the young Colonials, who, however, soon learned more from their Indian enemies than from the cut-and-dried methods of the Old World. The frequent minor wars with the Indians and along the French and Spanish frontiers kept alive a certain amount of military knowledge and training, without, however, any adequate preparation for even the affairs immediately ahead. The more extensive campaigns of the French and Indian War, in the West, in Cuba and Canada, trained most of our leaders for the fight for freedom; and as the Revolutionary War dragged on its leaders practically all recognized the vital necessity of organization and training.

The military adventurers from Europe were welcomed with open arms and their experience made the most of. Even then the Prussian thoroughness was appreciated, and Von Steuben, De Kalb, and a number of other professional soldiers, evolved the first system of drill and training for the American army.

The Germans not only gave, but they took away, and one of them, Gneisenau (afterward Blücher's great chief of staff), one of the founders of the modern German army, served under Washington, and was so impressed by the open-order fighting of the Americans—taken in turn by them from the Indians—that he evolved

much more elastic handling of the German soldiers in the field. The marked individuality of American soldiers has been both their strength and weakness. Not even Von Steuben's determined efforts resulted in any mechanical body, but they did infuse a certain amount of training, and the habits of discipline which have since persisted in the regular army.

His influence and that of his drillmasters was dominant until Napoleonic times, when the influence of the French engineers and other officers who were received into our army began to have a marked effect, principally through West Point, where many became instructors and professors. For many years, too, the honor men at West Point were sent to the French technical and professional schools, and the highly trained body of officers, notably, Grant, Lee, Sherman, Longstreet, Jackson, McClellan, Meade, Davis, Bragg, and others—who made the Mexican War our most successful one from the military and professional standpoint, received their inspiration and training from them. Scott and Taylor and a few of the old-timers had been in the War of 1812.

And so, as each minor campaign trained soldiers for the succeeding one, the Mexican War developed most of the great leaders in the Civil War. The Civil War, although it trained millions of men, and nearly all young ones, actually

prepared them for an abler return to civil life and for the continued opening up of our country —the building of the transcontinental railways and its great industrial development. The sad lessons of unpreparedness were forgotten and the vital value of training and teamwork on a grand scale ceased to be available at a stroke for military purposes, for what was left of an army was scattered all over the Western frontier for minor operations to protect the pioneers and operate against the Indians.

The failures and successes of the war, though made available as after all our wars by congressional investigations, were neither digested nor interpreted. The country has been full of books about the Civil War, telling about what happened from the writer's point of view. Moot points were fought over; strategy was discussed in Jomini-like formula; but just how the armies were organized, how they were trained, and the wonderfully successful problems of supply that had been solved, were neglected and forgotten. Military history was studied like the dead languages. After the terrible years of strain many soldiers lived on their laurels, and the chief concern of the nation was how to reward its heroes. The country was tired of war. The vital question which had caused it seemed to be settled and no thought of future wars was allowed to disturb.

Introduction

The rennaissance of intelligent professional study and training in America came when a certain coterie of live officers organized and developed the Leavenworth Schools. West Point still held to its standards of honor and duty and training of mind and character, and has furnished most of the officers, who in the Service Schools at Leavenworth, free from traditions and prejudices, have sought for the best wherever to be found, whether in Germany or France, to interpret our own military history and to make practical use of it.

The development in England has been almost parallel, up to the beginning of the Great War. For more than two years she has been in the fire, and it behooves us to take advantage of her experience. She has trained great armies, as we would have to do, developing suddenly and intensely great volunteer forces, with comparatively few trained officers and noncommissioned officers. This book gives our own training methods, with an attempt to take advantage of everything known of the European and English experiences. The danger in accepting any radical changes resulting from the present war is from the hasty generalizations of attachés, observers, and correspondents. The scale of this war is so great that every kind of warfare since the world began is in progress. Every weapon, from those of the men of the old Stone Age to

the modern machine gun, is in use. Classical and historical projectiles and machines are in the war pictures. Everything is made use of. Museums have been emptied of their so-called obsolete weapons. The picturesque near-armored knight is seen in the newspaper supplements beside the flying man in his gear. Every campaign of classic and historic times is being paralleled on the same ground; but the fundamental training of the soldiers is the same. To become disciplined, to keep himself fit, to march, and to shoot, are what we first train for.

Part I—The Enlisted Man

I

Rules Governing Discipline

"KITCHENER'S MOB," they were called in the early days of August, 1914, and it was thoroughly descriptive of the array of would-be soldiers which volunteered to save England. One of them says:

We herded together like so many sheep. We had lost our individuality, and it was to be months before we regained it in a new aspect, a collective individuality of which we became increasingly proud. My own battalion sergeant, in his address of welcome, sized us up accurately: "'Lissen 'ere, you men. I've never saw such a raw, round-shouldered batch o' rookies in fifteen years' service. Yer pasty-faced and yer thin-chested. Gawd 'elp 'is Majesty if it ever lays with you to save 'im. 'Owever, we're 'ere to do wot we can with wot we got!"

Indeed, the same could be said of any bunch of rookies, and also what the same American soldier in Kitchener's first 100,000 feelingly states after he was a veteran of Flanders:

It was interesting to note the physical improvement in the men wrought by a life of healthy, well-ordered

routine. My battalion was recruited largely from what is known in England as the lower middle classes; there were shop assistants, clerks, railway and city employees, tradesmen, and a general sprinkling of common laborers. Many of them had been used to an indoor life, practically all of them to city life, and needed months of the hardest kind of training before they could be made physically fit, before they could be seasoned and toughened to withstand the hardships of active service. Plenty of hard work in the open air wrought great and welcome changes. The men talked of their food, anticipated it with a zest which came from realizing for the first time the joy of being genuinely hungry. They watched their muscles harden with the satisfaction known to every normal man when he is becoming physically efficient. Food, exercise, and rest, taken in wholesome quantities and at regular intervals, were having the usual excellent results.

For my own part, I had never before been in such splendid health. I wish that it might at all times be possible for democracies to exercise a beneficent paternalism over the lives of their citizenry, at least in matters of health. It seems a great pity that the principle of personal freedom should be responsible for so many ill-shaped and ill-assorted incompetents. My fellow Tommies were living, really living, for the first time; they had never before known what it was to be radiantly, buoyantly healthy. The restraints of discipline and the very exacting character of military life and training gave them self-control and mental alertness.

At the beginning they were individuals, no more cohesive than so many grains of wet sand. After nine months of training they acted as a unit, obeying orders with that distinctive promptness of action that is so essential on the field of battle, when men think scarcely at all. Discipline was an all-important factor in the daily grind. At the beginning of their training the men of the new armies were gently dealt with. Allowances were made for civilian frailties and shortcomings, but as they adapted themselves to changed conditions, re-

strictions became increasingly severe. Once Tommy understood the reasonableness of severe discipline, he took his punishment for his offenses without complaint. He realized, too, the futility of kicking against the pricks. In the army he belonged to the government body and soul.

With the disappearance of the malcontents and incorrigibles the battalion soon reached a high grade of efficiency. Physical incompetents were likewise ruthlessly weeded out. If the standard of conduct of my battalion is any criterion, then I can say truthfully that there is very little crime in Lord Kitchener's armies, either in England or abroad. There were many offenders against minor points of discipline, such as untidy appearance on parade, inattention in ranks, tardiness at roll call, etc. The punishment meted out varied according to the seriousness of the offense and the past-conduct roll of the offender. It usually consisted of from one to ten days' confinement to barracks. Only twice did we have a general court-martial, the offense in each case being assault by a private upon a non-commissioned officer, and the penalty awarded was three months in a military prison. Tommy was quiet and law-abiding in England, his chief lapses being due to an exaggerated estimate of his capacity for beer.

In France his conduct has been, as far as my observation goes, splendid throughout. During six months in the trenches I saw but two instances of drunkenness. Never did I see or hear of a woman treated otherwise than courteously. Neither did I see or hear of any instances of looting or petty pilfering from the civilian inhabitants. It is true that the men had fewer opportunities for misconduct and they were fighting in a friendly country. Even so, active service as we found it was by no means free from temptations, and the admirable restraint of most of the men in face of them was a fine thing to see.

"Blood is thicker than water," and a common tongue is a heart-warmer; hence the foregoing

picture by an American of the discipline and rules of conduct in the British army applies absolutely to our own. The Articles of War, which is the statutory military code of the American army, was taken almost bodily from the British articles of war, and the armies have developed on parallel lines.

The standard of conduct which England expected of her fighting men was well set forth in Lord Kitchener's letter to the troops ordered abroad:

You are ordered abroad as a soldier of the King, to help our French comrades against the invasion of a common enemy. You have to perform a task which will need your courage, your energy, your patience. Remember that the honor of the British army depends upon your individual conduct. It will be your duty not only to set an example of discipline and perfect steadiness under fire, but also to maintain the most friendly relations with those whom you are helping in this struggle. The operations in which you are engaged will for the most part take place in a friendly country, and you can do your own country no better service than in showing yourself in France and Belgium in the true character of a British soldier. Be invariably courteous, considerate, and kind. Never do anything likely to injure or destroy property, and always look upon looting as a disgraceful act. You are sure to meet with a welcome and to be trusted, and your conduct must justify that welcome and that trust. Your duty cannot be done unless your health is sound, so keep constantly on your guard against any excesses. In this new experience you may find temptations both in wine and women. You must resist both temptations; and while treating all women with perfect courtesy,

you should avoid any intimacy. Do your duty bravely. Fear God. Honor the King.

KITCHENER, Field Marshal.

The American soldier on enlistment takes this oath:

I, ——, do hereby acknowledge to have voluntarily enlisted this —— day of ——, 19—, as a soldier in the army of the United States of America, for the period of seven years in active service and in the Army Reserves for the periods and under the conditions prescribed by law, unless sooner discharged by proper authority; and do also agree to accept from the United States such bounty, pay, rations, and clothing as are or may be established by law. And I do solemnly swear (or affirm) that I will bear true faith and allegiance to the United States of America; that I will serve them honestly and faithfully against all their enemies whomsoever; and that I will obey the orders of the President of the United States, and the orders of the officers appointed over me, according to the Rules and Articles of War.

By so doing he surrenders a certain amount of freedom and gives himself to his country for weal or woe, but by the same token he is endowed with a dignity and honorable self-respect, and his personal rights and privileges are accurately defined and strictly safeguarded. All persons in the military service are required to obey strictly and to execute promptly all lawful orders of their superiors. There is no official equality in any army; everyone is responsible to a superior in the military hierarchy, but there is a fine spirit of comradeship and personal

equality among the officers and men of the service, and under our laws and customs there is the truly American chance and hope of rising to the top. As every American boy may aspire to be president, so every private soldier in the ranks may rise by his own efforts to the highest rank in the army. In recent years two chiefs of staff of the army, Generals Chaffee and Young, have risen from the ranks. Ambitious and apt youngsters may obtain commissions by appointment to West Point, or, after a year's service, by passing an examination, or may obtain a commission directly, or become an officer of the Reserve Corps from civil life. Many of our ablest officers to-day have come from the ranks. Soldiers lacking in advanced education still have the chance for noncommissioned officers, and many opportunities at the various service schools for advancing their education.

Military authority is exercised with firmness, kindness and justice. Punishment must conform to law and follow offenses as promptly as circumstances will permit. Soldiers have absolute right of appeal, and the measures for their protection are carefully set forth. Superiors are forbidden to injure those under their authority by tyrannical or capricious conduct or by abusive language.

Courtesy among military men is indispensable to discipline. Observance of the forms of mili-

tary courtesy is a measure of discipline and soldierliness. All the armies of the civilized world from time immemorial have found it advantageous and fitting to observe strict military etiquette and ceremonial; and these forms are much the same in all services.

The military salute is universal. It is at foundation but a courteous recognition between two individuals of their common fellowship in the same honorable profession, the profession of arms. Regulations require that it be rendered by both the senior and the junior, as bare courtesy requires between gentlemen in civil life. It is in reality rather a privilege than an obligation, it betokens good standing in a common cause; a prisoner, not being in good standing, is forbidden by regulations to render the salute. This is the right conception of saluting; and in this light you will see that the question should not be "Shall I salute?" but rather "May I salute?" And if you are an individual out of ranks you can rarely go wrong by saluting. The salute is rendered to all officers, active or retired, of the army, navy, Marine Corps, and organized militia. Officers of foreign military and naval services should be saluted as those of our own.

Whenever the national anthem is played at any place when persons belonging to the military service are present, all officers and enlisted men not in formation shall stand at attention facing

toward the music (except at retreat when they shall face toward the flag). If in uniform, covered or uncovered, or in civilian clothes, uncovered, they shall salute at the first note of the anthem, retaining the position of salute until the last note of the anthem. If not in uniform and covered, they shall uncover at the first note of the anthem, holding the headdress opposite the left shoulder and so remain until its close, except that in inclement weather the headdress may be held slightly raised.

The same rules apply when "To the Color" or "To the Standard" is sounded as when the national anthem is played.

When played by an army band, the national anthem shall be played through without repetition of any part not required to be repeated to make it complete.

The same marks of respect prescribed for observance during the playing of the national anthem of the United States shall be shown toward the national anthem of any other country when played upon official occasions.

Officers and enlisted men passing the uncased color will render honors as follows: If in uniform they will salute as they would a senior officer; if in civilian dress and covered they will uncover, holding the headdress opposite the left shoulder with the right hand; if uncovered they will salute with the right-hand salute.

By uncased colors is meant those that are not in their waterproof cases. By "colors" is meant the national and regimental flags that are carried by troops.

In Army Regulations the word "colors" is used in referring to regiments of infantry, battalions of engineers, and coast artillery, while "standard" refers to cavalry and field artillery. By "flag" is meant the national emblem that waves from flagpoles and other stationary poles. They are not saluted, except at the ceremony of raising or lowering when the "Star-Spangled Banner" or "To the Color" is being played.

In uniform, covered or uncovered, but not in formation, officers and enlisted men salute military persons as follows: With arms in hand, the salute prescribed for that arm (sentinels on interior guard duty excepted); without arms, the right-hand salute.

In civilian dress, covered or uncovered, officers and enlisted men salute military persons with the right-hand salute.

Officers and enlisted men will render the prescribed salutes in a military manner, the officer junior in rank or the enlisted man saluting first. When several officers in company are saluted all entitled to the salute shall return it.

Except in the field under campaign or simulated campaign conditions, a mounted officer (or

soldier) dismounts before addressing a superior officer not mounted.

A man in formation shall not salute when directly addressed, but shall come to attention if at rest or at ease.

When an officer entitled to the salute passes in rear of a body of troops it is brought to attention while he is opposite the post of the commander.

In public conveyances, such as railway trains and street cars, and in public places, such as theaters, honors and personal salutes may be omitted when palpably inappropriate or apt to disturb or annoy civilians present.

Salutes are rendered within such distances as allow individuals and insignia of rank to be readily recognized at about thirty paces. You would salute an officer where you would exchange greetings with a casual acquaintance. The soldier is "at attention" when he salutes; either at a halt standing at attention, or if walking, marching at attention. This requires military bearing, clothing properly adjusted, and forbids smoking while saluting. If moving at a trot or double time, he must first come to the walk or quick time. An officer would continue at double time or the trot, but should be saluted just the same.

An enlisted man without arms, mounted or dismounted, salutes with the right hand. If officer

and soldier are approaching each other, the salute is commenced when six paces from the officer. If the approach does not continue to within six paces the salute is rendered at the nearest point. In passing each other in the same direction, the salute is rendered just as they pass. It is a common fault to begin the salute six feet rather than six paces away. Count your steps some time and see that you are prompt enough, otherwise the officer may not have opportunity to return it other than in a perfunctory manner.

In saluting look at the person saluted and maintain the salute until it has been acknowledged or the officer has passed. The precision and snap with which you salute marks the type of soldier you are and the pride you take in your profession. It is a pleasure to return a snappy salute, and a strange officer is apt to inquire to what organization you belong. There are so-called salutes so indifferently made that an officer would be ashamed to acknowledge them. He could feel no brotherhood with such a soldier.

Where an officer is recognized, he is saluted the same whether in civilian clothes or uniform. The enlisted man may be in uniform or in civilian clothes. The presence of ladies with either party makes no difference.

An enlisted man out of ranks armed with a saber salutes with the saber if drawn, otherwise with the hand; armed with the rifle, he makes

the prescribed rifle salute, the rifle on either shoulder. If indoors he salutes at the "order," or if moving, at the "trail." The same regulation obtains as to distances, and looking at the person to be saluted.

The soldier salutes with the "present arms" only when posted as a sentinel, except on field service, when a mounted man, officer or soldier, wishes to address or is addressed by his military superior, he first dismounts.

An enlisted man accompanying an officer, should walk about two paces to the officer's left and rear; if riding, this distance is doubled.

A noncommissioned officer in command of a detachment should call them to *attention* and himself render the salute to an officer as above explained for a single individual. If the officer passed in rear the detachment would be brought to attention and so held until he has passed, but no salute would be rendered.

When an officer approaches a group of enlisted men not in ranks, the first one to perceive him should call "attention" so that all will hear, when all stand at attention, and, at the proper point, all salute. If walking together the same rules obtain, except that the salutes would be rendered without halting. If indoors the same rules obtain except that if unarmed they uncover and that no one salutes unless spoken to; if armed all would salute. One exception to this rule—if

seated at meals the soldiers do not rise at the call "attention" but cease eating and remain sitting at attention. Of course, any individual addressed by the officer would rise. By "indoors" is meant military offices, barracks, quarters, and similar places—it does not refer to storehouses, riding halls, stables, post-exchange buildings, hotels, etc.

Upon the approach of an officer indoors, the enlisted man, if unarmed, uncovers and stands at attention, and does not salute. If armed with a rifle he salutes from the position of the order or the trail; if armed and uncovered, he should cover before saluting if practicable. A soldier with belt, side arms, pistol, saber, or bayonet, is considered armed.

Whenever holding conversation with a superior, a soldier should stand strictly at *attention*, the conversation being preceded by the military salute; and it is only by strictly observing the position of attention that you may be really at ease, any halfway measures will tend to make you self-conscious and ill at ease. And do not keep assuming that the officer has finished his remarks and thus have to repeat your salute at leaving. It is much more military to stand pat until he has dismissed you with such words as "that will do," then you make a dignified salute on departure.

The soldier actually at work does not stop his

work to render a salute, unless addressed by the officer. Driving or riding in a carriage or other vehicle, the soldier would salute an officer as though walking, but without rising, unless a senior be present in the vehicle. Circumstances which would render the salute unnecessary, such as endangering passengers or pedestrians if attention be relaxed may arise. Such cases must be met with good judgment; there is no breach of discipline when intentional discourtesy is not present.

In camp a mounted man should not take his horse up in front of an officer's tent where he may soil the ground. Leave him tied or held at a little distance. Even when he brings up the officer's horse, he may hold him a little way off, until the officer directs him to come closer.

In holding the horse for an officer to mount, the orderly should invariably stand on the off side facing the horse's shoulder, both reins held firmly in the right hand just behind the bit, the left hand holding the right stirrup and bearing down to keep the saddle from being displaced as the officer mounts. He then adjusts the stirrup neatly to the officer's foot as his leg comes down in the mount. If the orderly has his own horse with him, he must hold that horse out of the way on the off side of the officer's horse.

An enlisted man in conversation with a military superior will properly use the third person, i. e.,

he will ask, "Does the sergeant intend so and so?" Or, "Does the lieutenant want his horse?" Not "Do *you* intend so and so," etc.

Where a verbal message is carried between officers the messenger prefaces his message with "The adjutant presents his compliments" (the commanding officer, Captain so and so, whoever sends it) "and directs, asks, says, requests, etc.," followed by the message.

To report for duty as orderly, the man proceeds to the officer to whom detailed, stands at attention before him and, when the officer gives him opportunity, salutes and reports in these words: "Sir, Private ———, Company I, Tenth Infantry, reports as orderly."

At all times and places outside his quarters an enlisted man should be neat and orderly in his appearance. His hat and clothing should be properly adjusted and buttoned up. Even fatigue uniform should be properly worn. In the field in hot weather it is allowable in ordinary circumstances to have the top button of the shirt unbuttoned—but never the shirt sleeves rolled up. At formations, such as retreat, everything should be the neatest possible. There is something wrong with the organization whose members are habitually indifferent to their soldierly appearance.

Every soldier should know the various insignia worn by officers to indicate their grade.

They are found on the collar of the O. D. shirt, on the shoulder straps and loops of coats, and on sleeves of overcoat, and are as follows on the collars and shoulders:

Major general—two stars.

Brigadier general—one star.

Colonel—eagle.

Lieutenant colonel—oak leaf, silver.

Major—oak leaf, gold.

Captain—two silver bars.

First lieutenant—one silver bar.

Second lieutenant—has no insignia of rank, but may be recognized as an officer by the other insignia.

On overcoat and full-dress coat sleeves a knot of three loops of braid for officers below the grade of general.

Colonel—the knot contains five rows of braid.

Lieutenant colonel—four rows.

Major—three rows.

Captain—two rows.

First lieutenant—one row.

In addition to the insignia of rank all commissioned officers may be distinguished by special ornaments, for example—with the olive-drab blouse the commissioned officers have a band of braid around the cuff; with the dress uniform and full-dress uniform respectively shoulder straps and shoulder knots are worn; with the olive-drab shirt a commissioned officer has the

letters "U. S.," "U. S. V.," or "U. S. R.," on the right side in the middle of the collar one inch from the end, and on the left side similarly placed the insignia of the corps, department, or arm of the service to which he belongs.

No honors are paid by troops when on the march, in trenches or on outpost, unless a special individual be addressed or the command be called to attention.

No salute is rendered when marching in double time.

Arms are not presented by troops, except in the ceremonies.

The commander of a body of troops salutes all general officers and the commander of his post, regiment, squadron, or immediate organization, by bringing his command to attention and saluting in person. He salutes all others without bringing it to attention.

When two officers exchange salutes, each commanding a body of troops, the troops are brought to attention during the exchange.

An officer in command of troops is saluted by all junior officers and by men out of ranks. Except during ceremonies, when especially prescribed to the contrary, an officer will at all times acknowledge the courtesies of his juniors by returning the salute.

Respect to superiors will not be confined to acts on duty, but will be extended on all oc-

casions. The conventional courtesies common among soldiers of all nations have descended from the days of chivalry. Saluting, standing at attention, rising in the presence of superiors, and other marks of respect are necessary to the efficiency of soldiers, as well as marks of mutual respect. Manly deference to superiors, which in military life is merely recognition of constituted authority, does not imply inferiority any more than respect for law implies cowardice. These habits and courtesies are just as obligatory for officers as for soldiers. The highest ranking general in the army returns the salute of the greenest recruit. All officers and soldiers salute, excepting the soldier not in good standing, who is not allowed to salute.

From a recent letter of a former German soldier, published in a daily paper, I take his very descriptive account of the daily routine of a German soldier. Of course, it is that of almost every other soldier, but the average American so seldom sees the American soldier in arms, and when he does see him it is usually on pass or otherwise off duty, or if on duty, at some parade or ceremony, that in many mild American minds the life of the soldier is a lazy, and apparently useless, one. I remember last summer, during the raiding on the border, when every trooper was riding on night patrols protecting the scattered farms and ranches near the Rio Grande,

that one big ranchman came into my camp and demanded that a detachment be stationed at his ranch house. I tried to explain to him that my command was so small that I could not furnish such a detachment but would give him protection in my own way by patrolling and keeping in touch over the telephone. In disdain he turned toward the tents of the troopers and called attention to the large number lying asleep on their bunks, not realizing that every one of the troopers had spent all the night before patrolling and protecting in the best possible way. Much of the work of the soldier is done at night or so early in the morning that the visiting civilian at an army post may not see much sign of activity. But the men who have attended training camps or been with the National Guard on the border know that the soldier's life is a hard and active one, and they have a respect born of experience and feeling of comradeship that the regular soldier is glad to welcome. The very enthusiasm of the civilian soldier who has had association with the regular soldiers is partly due to the surprised interest in that fine body of men who have done him many a good turn in the field and shown him the little wrinkles of the old soldier.

"German militarism" as I know it—having seen years of service in the German army—is, in my opinion, the foundation of Germany's success in all other fields, such as manufacture, commerce, education, and the

solving of economical and social questions in general. "German militarism" is, in my opinion, the greatest university in the world, the university of the masses, where the healthy body of the young man is made perfect, where discipline teaches him that he is not the "only pebble on the beach," but that strict obedience to orders issued by superiors is an absolute necessity to accomplish in union what cannot be accomplished singly.

Military laws and orders governing the German army are of the highest moral order. All that is bad is eliminated; all that is good adopted. The life of the German soldier is almost ideal. Between five and six in the morning he rises; he makes his bed, washes, dresses, cleans once more the things needed for the day's service, then gets his coffee. Generally at eight the three-hours' service, whatever it consists of, begins; shortly after eleven he is back in his room. Around twelve o'clock the only hot meal given in the army, and consisting of meat, potatoes, and vegetables, mostly cooked in a stew, is eaten. About two o'clock the afternoon service begins, and ends at four; from five to six an hour's instruction generally ends the day's work, unless it be that the soldier is ambitious and avails himself of the many places of learning either provided directly by the regiment or else provided through the regiment by private teachers.

In my regiment there were chances to learn penmanship, stenography, bookkeeping, telegraphy, surveying, and many other things which the average common soldier never would have a chance to get acquainted with in his civilian life. Of course, to gain this kind of knowledge he uses his own free time, as the hours are generally set so that he can be back in his quarters at nine in winter and ten in summer. Supper the soldier provides himself, and if he is very poor and has no relatives his black bread is the menu, but, as a rule, all soldiers get enough eatables or money from home to be able to provide plenty of good things to go with the wholesome bread, and, as the ties of comradeship are

very close among the boys, those that have no relatives very seldom need eat their bread dry, because when packages arrive from home there is generally a division and every one gets his portion even though some of them cannot reciprocate.

II

Care of Health in Garrison and Field

"WAR is hell-th" is the play on Sherman's oft-quoted words of a happily thoughtful Plattsburg man and which should be still more often quoted.

It is not enough for a soldier to be healthy. His life and work demand that he should have more than the average amount of muscular strength and endurance in addition to good health.

His enlistment practically insures good health to start. He must not only keep that good health by intelligent care and pride, but he must learn how to increase his general health and bodily vigor, his muscular strength and endurance, self-reliance, smartness, activity and precision. All are essential soldierly qualities. The Greeks considered them all as physical qualities, but most of them are directly dependent on the inner virtues, and together make a man bold and ready for the utmost, so that he may know how both to live and to die like a soldier.

Health in Garrison and Field

In Garrison

On enlistment, and afterward at frequent intervals, soldiers are carefully examined by surgeons. At these times surgeons should be asked to indicate the weak points in one's physique and how harmonious strength can best be developed. Exercises which require activity and agility rather than those demanding strength only should be used daily. As far as possible, select the particular exercise which seems most attractive. Short and frequent exercises should be preferred, beginning with the least violent ones and gradually working up to those that are more so, then carefully working back to the simpler ones, so that on finishing the condition will be as nearly normal as possible. All exercises should be carried on as far as possible in the open air. By constant practice learn to breathe slowly through the nostrils during all work, especially while running. Never exercise immediately after a meal, nor eat or drink immediately after exercise. Do not hesitate to drink good cool water in small quantities, but the exercise should be continued, particularly if perspiring freely. Cool off gradually and wear some sweater or extra clothing while overheated. Follow the exercise whenever practicable by bathing. After very violent exercise try to get a hot bath, and if there is time follow with a cold or a cool one. Light flannel is

best to wear next the body during violent work and play.

Scope

Setting-up exercises are the foundation upon which the entire course of training in the service is based. Their importance cannot be overestimated, as by means of them alone it is possible to effect an all-round development impossible of attainment by any other method. They should therefore form a very important part of every drill.

Marching in quick time and exercises calling into action the various parts of the body while marching tend to develop coordination, upon which to a great extent poise, posture, carriage and rhythm are dependent. Marching in double time is a heart and lung developing exercise of moderate severity. Running, on the other hand, especially when continued for long periods, or at a high rate of speed, or when taken in conjunction with leg exercises, affects those organs in a very marked degree. Both double timing and running are invaluable in the development of endurance and organic vigor.

Dumb-bell exercises are closely allied to the setting-up exercises and differ from these only by the extra weight that is imposed by the bells, which should, however, never exceed two pounds.

Club exercises are of use principally as a means for the development of coordination and grace in the upper extremities; their weight, since muscular development is not aimed at, should not exceed two pounds.

Rifle exercises have for their object the development of "handiness" with the piece. Owing to the weight of the rifle they are powerful factors in the development of the muscles of the arms, upper back, shoulders, and chest, and when taken in conjunction with trunk and leg exercises they are excellent agents for the all-round development of those who possess the strength to wield the piece to advantage.

Climbing, on poles or ropes, when both arms and legs are used, brings into action nearly every muscle of the body and exerts considerable influence upon the heart. Where poles or ropes of sufficient length are used this exercise will develop self-reliance also.

Jumping, when indulged in as a gymnastic exercise, where a series of from eight to ten jumps of moderate length are executed successively, is essentially a leg and heart developing exercise. When form is insisted upon and the nature of the jump is varied by introducing various leg, arm, and trunk movements, it becomes a strong factor in the development of coordination.

Apparatus work should be supplementary to all other forms of training. The chief object of

this work in the service should be to use it as a means for the development of the ability of the soldier to control his body while its weight is supported by or suspended from the arms and hands, in order to enable him successfully to overcome and surmount such obstacles as may present themselves during field service. The exercises composing this part of the training should, therefore, be confined to those that will develop the muscular strength of the entire body in general and that of the arms and legs in particular, and at the same time make the soldier agile and active and teach him decision and self-reliance.

Gymnastic contests are the simpler forms of antagonistic gymnastics in which the participants are pitted against each other, and which never fail to induce the usual rivalry for superiority attending personal contests. Their chief value lies in the development of agility and quickness of thought and action. They are quite the most interesting of those exercises in which the effort is lost sight of in the desire to win.

Athletics, when employed for the sake of their value as a means for the development of large numbers, which should be the case in the service, have nothing in common with competitive athletics. In other words, their value lies entirely in their usefulness in the development of physical strength, endurance, and skill, and not in the making or breaking of records.

Swimming is of vital importance to everyone connected with the service, and it should be made obligatory upon all officers and enlisted men to make themselves proficient in it. Aside from its usefulness it is without doubt the best single means to all-round physical development.

Boxing and wrestling should be encouraged at all times, not only on account of their value as a means to bodily development, but on account of the self-reliance and confidence they give to those who are proficient in them.

Not much needs to be said as to competitive athletics in garrison, for all soldiers take part in football or baseball and track athletics, encouraged by their officers.

Every opportunity should be taken to ride, for sooner or later most soldiers, whether of the mounted branch or of the infantry, have the chance and should make the most of it. If serving with mounted commands, the troopers take pride in suggestions and passing the results of their own experience as horsemen. Infantrymen who like horses always have the chance, too, for detail to the mounted orderly detachment at headquarters.

In garrison the life of the soldier is one of regular habits and the finest of opportunities for healthful and enjoyable physical development. For a young man of vim and vigor it is the finest life on earth if he will only make it so. He

has for regular daily diet what his brother in civil life gets only on holidays. As a rule the exercises which the civilian has little time for are part of the regular work of the soldier. Much of his exercise is chosen for him, and the close association with his comrades keeps him up to the mark. To play the game and be part of the great team is more or less forced upon him. He must be fit, and he must be clean, and he must be decent, and the more of it the better. Many soldiers suffer from one irregular habit which causes constipation, discomfort and disease, owing to the fact that so often they are called for duty immediately after breakfast. This is especially so in the cavalry and in the field. Many experienced soldiers have overcome this by adopting the Indian habit of going to the rear immediately after reveille, or in some cases before reveille. This habit can always be acquired; it can then always be regular, and if a bath or partial bath can be had then, there is complete cleanliness and comfort and prevention from many attendant troubles.

Being young and healthy, and so often careless, it is well for the soldier to know and mark these plain, flat rules, the observance of which have made the modern soldier a model man, ready for anything and everything. The garrison life is the training for the field, and those who have not experienced the life and dangers

of serving with thousands of others in the field should take to heart the results of the experience which have changed armies from hotbeds of disease to the fit, free men of to-day. In all the wars of ancient times, many more soldiers were put out by disease than by battle; this is true as recently as the Spanish War. The American army learned its lesson then. The American soldier can now campaign in any part of the world —in Alaska, in the Philippines, in Cuba, or on the Mexican border — and remain active and healthy. The game of the soldier is to do his part in preventing disease by following the rules of sanitation laid down. He doesn't need to bother about what will happen to him should he be unlucky or suffer from his own carelessness. The army is well supplied with excellent surgeons always at hand to give the best of treatment to the sick or injured. Vaccination and innoculation for typhoid have done away with the old-time dread diseases of smallpox and enteric fevers. The red-flag dangers to-day are flies and vermin, mosquitoes and venereal diseases. Fortunately most of the dangerous mosquitoes are night birds, so that by the use of mosquito nets when sleeping and head nets when on guard and, when practicable, on other night duty, the danger from the mosquito is reduced to the minimum. Flies have an apt alliteration with filth.

The dangers and results of venereal disease

have been impressed on all of us, but some soldiers are careless and many recruits ignorant. The War Department has recognized this, and all soldiers are carefully instructed on the prophylactic treatment, to save them from the terrible diseases that may follow their misconduct. At all army stations prompt treatment is available, and even the most reckless soldiers now know that they can keep themselves clean and free from all venereal diseases. Should any, however, become evident, or the slightest suspicion be felt, consult the surgeon at once. Young soldiers often from a sense of shame hide their troubles or consult quacks, thereby suffering the dread results, whereas by quick action at the hospital and consulting the surgeon the next morning, the soldier can keep clean and well. Instructions are fully set forth in War Department General Orders No. 17 of 1912 and No. 71 of 1913, and the carrying out of these measures has largely wiped away the shameful record of the old army.

Care of Health

History shows that in most past wars many more men have died from disease than from wounds received in battle, and that many a campaign has been brought to naught because sickness had incapacitated the men to complete it. Much of this disease is preventable, and is due

either to the ignorance or to the carelessness of the person who has the disease, or of other persons about him. It is a terrible truth that one man who violates any of the great rules of health may be the means of killing many more of his comrades than are killed by the bullets of the enemy.

Here is a subject for the direct personal attention of every man in the service. It is as much your military duty to be well and strong as to be skilled in use of your arms. A sick man is of no more value in campaign and battle than a wounded man, or a prisoner, and he is much more of a nuisance. Negligently or ignorantly to allow yourself or your men to become sick is as disastrous to battle efficiency as to allow them needlessly to be killed and wounded or taken prisoner. When men and leaders realize this, they will more cheerfully and conscientiously give heed to the rules of health.

It is therefore important that every soldier be impressed with the necessity of keeping healthy, and not only that leaders be trained to guard the health of their men, but that every man be taught how to care for his own health, which will include seeing to it that his comrades also observe the prescribed rules for this purpose.

Catching or contagious diseases are the ones mostly to be feared among troops. All of them are due to germs, which are either little animals

or little plants so very small that they can only be seen by the aid of the microscope. One billion dead typhoid germs are given in the fifteen drops of the second and third doses of typhoid vaccine. All diseases caused by germs are "catching." All other diseases are "not catching."

There are only five ways of catching disease:

(*a*) Getting certain germs on the body, or touching some one or something which has them on it. Thus, one may catch venereal diseases, smallpox, measles, scarlet fever, chicken pox, mumps, boils, lice (body), ringworm, barbers' itch, dhobie itch, and some other diseases. Wounds are infected in this manner.

(*b*) Breathing in certain germs which float in the air. In this way one may catch pneumonia, consumption, influenza, diphtheria, whooping cough, tonsilitis, spinal meningitis, measles, and certain other diseases.

(*c*) Taking certain germs in through the mouth in eating or drinking. Dysentery, cholera, typhoid fever, diarrhea, and intestinal worms may be caught in this manner.

(*d*) Having certain germs injected into the body by bites of insects or by deposit on the body of their excreta, such as mosquitoes, fleas, lice and bedbugs. Malaria, yellow fever, dengue fever, typhus, and bubonic plague may be caught in this way.

(*e*) Inheriting the germ from one's parents.

Persons may have these germs sometimes without apparently being sick with any disease. Such persons and those who are sick with the diseases are a great source of danger to others about them. Germs which multiply in such persons are found in their urine and excretions from the bowels; in discharges from ulcers and abscesses; in the spit or particles coughed or sneezed into the air; in the perspiration or scales from the skin; and in the blood sucked up by biting insects.

Those who have taken care of their health, and who have not become weakened by bad habits, exposure, and fatigue, are not only less liable to catch disease, but are more apt to recover when taken sick.

Knowing all these things, the soldier can understand the reasons for the following rules and how important it is that they be carried out by each person:

Stay away from persons having "catching" diseases.

If you have any disease, do not try to cure it yourself, but go to the surgeon. Insist that your comrades do likewise.

Cooked germs are dead and therefore harmless, Water, even when clear, may be alive with deadly germs. Therefore, when the conditions are such that the commanding officer orders all drinking water to be boiled, be careful to live up to this order.

Use the latrines and do not go elsewhere to relieve yourself. In open latrines cover your deposit with dirt, as it breeds flies, and may also be full of germs.

Flies carry germs from one place to another. Therefore, see that your food and mess kit are protected from them.

All slops and scraps of food scattered about camp soon produce bad odors and draw flies. Therefore, do your part toward keeping the camp free from disease by carefully depositing such refuse in the pits or cans used for this purpose.

Urinate only in the latrines, or in arrangements provided for this purpose, never on the ground around camp, because it not only causes unpleasant odors, but urine sometimes contains germs of "catching" diseases.

Soapy water thrown on the ground soon produces bad odors. Therefore, in camps of several days' duration, this water should be thrown in covered pits or in cans used for this purpose.

As certain mosquitoes can transmit malaria and yellow fever, use your mosquito bar for this reason as well as for personal comfort.

Keep your mouth clean by brushing your teeth once or twice a day. It helps to prevent the teeth from decaying. Decayed teeth cause toothache. They also lead to swallowing food without properly chewing it, and this leads to stomach trouble of various kinds. Food left around and between

the teeth is bad for the teeth and forms good breeding places for germs.

Keep the skin clean. Through the pores of the skin the body gets rid of much waste and poisonous matter. Therefore remove this, and keep the pores open by bathing once every day, if possible. If water is scarce, rub the body over with a wet towel. If no water is at hand, take a dry rub. Wash carefully the armpits, between the legs, and under the foreskin, as this will prevent chafing.

The skin prevents the sensitive parts underneath from injury and helps to keep out germs. Therefore, when blisters are formed do not tear off the skin. Insert a needle under the skin a little distance back from the blister and push it through to the opposite side. Press out the liquid through the holes thus formed. Heat the needle red hot first with a match or candle to kill the germs.

When the skin is broken (in cuts or wounds), keep the opening covered with a bandage to keep out germs and dirt; otherwise the sore may fester. Pus is always caused by germs.

Take care of your feet. A soldier cannot march with sore feet, and marching is the main part of a soldier's duty. Even the cavalrymen must be able to work on foot. The exigencies of service may require it at any time. The Germans treat sore feet as a military offense, as it is gen-

erally due to carelessness or neglect on the part of the soldier. Wash and dry the feet carefully at the end of every day's march. This removes the dirt and perspiration and makes the skin healthy. It soothes tired feet and greatly lessens the chances of sores and chafing. Do not wander about camp through the grass barefooted, as the skin may be scratched or the feet bruised, or poisonous weeds may be encountered. If the skin is tender or the feet perspire freely, wash with warm salt water or alum water. For raw or chafed spots use foot powder, which can be obtained at the hospital. Grease or soap or foot powder applied to the foot or stocking before starting on the march prevents rubbing. Cut the toenails square (fairly close in the middle, but leaving the sides somewhat longer), as this prevents ingrowing nails. If corns or bunions or ingrowing nails give trouble, or any rawness or rubbing causes pain, go to the surgeon promptly for advice. Do not wait several days till you can no longer march. Do not wear stockings full of holes if you can possibly get others. Wear a clean pair every day, washing them at night if necessary. The light woolen stockings issued by the government are probably the best to use even in the summer. Should a hole or seam in the stocking begin to cause rubbing, turn it inside out or change it to the other foot. Be careful in drawing shoes to get a good fit. Remember that the

feet lengthen in a hard march and that the shoes should allow for this. Get them two-thirds of an inch longer than the foot. Do not be so foolish or green as to start out to march wearing new shoes or the light shoes ordinarily used by civilians, or low shoes, or patent leather shoes. Keep the marching shoes well oiled to keep them soft and pliable. If they get full of sand on the march wash out the inside on reaching camp and then hang on a couple of pegs overnight to drain. They may feel cool and clammy in the morning, but they will be clean and soft. Never place the shoes near a fire, or in the sun, to dry as it makes them hard and stiff.

Keep your hair short. Long hair and a long beard in the field usually means a dirty head and a dirty face, and favors skin diseases, lice and dandruff.

Do not let others spit on the floor of your tent or quarters.

Be careful of any discharges from the horses' nostrils, eyes, etc. Always wash your hands carefully after grooming and before eating.

Do not let any part of the body become chilled, as this very often is the direct cause of diarrhea, dysentery, pneumonia, rheumatism, and other diseases.

If unavoidably chilled, take deep breathing exercises at once; it will prevent taking cold.

Wet clothes may be worn while marching or

exercising without bad results, but there is great danger if one rests in wet clothing, as the body may become chilled.

Do not sit or lie or sleep directly on damp ground, as this is sure to chill the body.

When hot or perspiring or when wearing damp clothes, do not remain where a breeze can strike you. You are sure to become chilled.

Every day, if possible, hang your blanket and clothing out to air in the sun; shake or beat them with a small stick. Germs and vermin do not like this treatment, but damp, musty clothing suits them very well. Wash your shirts, underwear and socks frequently. The danger of blood poisoning from a wound is greatly increased if the bullet first passes through dirty clothes.

Always prepare your bed before dark. Level off the ground and scrape out a little hollow for your hips. Get some straw or dry grass, if possible. Green grass or branches from trees are better than nothing. Sleep on your poncho. This keeps the dampness from coming up from the ground and chilling the body. Every minute spent in making a good bed means about an hour's good rest later on.

Avoid the food and drink found for sale in the cheap stands about camp. The quality is generally bad, and it is often prepared in filthy places by very dirty persons.

Do not drink water from any source until it

has been declared safe by the company commander. If there is any doubt, boil it twenty minutes first. Keep everything out of your mouth that may be unclean, straws, toothpicks, etc.

The use of intoxicating liquor is particularly dangerous in the field. Its excessive use, even at long intervals, break down one's system. Drinking men are more apt to get sick, and less liable to get well, than are their more abstemious comrades. If alcohol is taken at all, it is best after the work of the day is over. It should never be taken when the body is exposed to severe cold, as it diminishes the resistance of the body. Hot tea or coffee is much preferable under these circumstances.

A Few First-Aid Rules

The bandages and dressings contained in the first-aid packet have been so treated as to destroy any germs thereon. Therefore when dressing a wound be careful not to touch or handle or expose unnecessarily that part of the dressing which is to be applied to the wound.

A sick or injured person should always be made to lie down on his back, if practicable, as this is the most comfortable position, and all muscles may be relaxed.

All tight articles of clothing and equipment should be loosened so as not to interfere with breathing or the circulation of the blood. Belts,

collars, and the trousers at the waist should be opened.

Do not let mere onlookers crowd about the patient. They prevent him from getting fresh air, and also make him nervous and excited.

In case of injury the heart action is generally weak from shock, and the body therefore grows somewhat cold. So do not remove any more clothing than is necessary to expose the injury.

Cut or rip the clothing, but do not pull it. Try to disturb the patient as little as possible.

Do not touch a wound with your fingers, or a handkerchief, or with anything else but the first-aid dressing. Do not wash the wound with water. Otherwise you may infect the wound.

Do not administer stimulants (whisky, brandy, wine, etc.) unless ordered to do so by a doctor. While in a few cases stimulants are of benefit, in a great many cases they do positive harm, especially where there has been any bleeding.

The heart may be considered as a pump and the arteries as a rubber hose which carry the blood from the heart to every part of the body. The veins are the hose which carry the blood back to the heart. Every wound bleeds some, but unless a large artery or a large vein is cut, the bleeding will stop after a short while if the patient is kept quiet and the first-aid dressing is bound over the wound so as to make pressure on it.

When a large artery is cut the blood gushes out *in spurts* every time the heart beats. In this case it is necessary to stop the flow of blood by pressing upon the hose somewhere between the heart and the leak.

If a vein be cut the blood is darker colored and *flows steadily,* and the flow will be stopped by pressing between the cut and the extremity, that is somewhere beyond the leak away from the heart.

This pressure may be applied temporarily by the thumbs pressing through the flesh down against the bone, and thus closing the artery or vein.

Another way, and more permanent, is to apply pressure by means of a tourniquet. Place a pad of tightly rolled cloth or paper, or any suitable object, over the artery between the heart and the wound. Tie a bandage loosely about the limb over this pad, and then insert your bayonet or a stick, and twist up the bandage until the pressure of the pad on the artery stops the leak. Twist the bandage slowly and stop as soon as the blood ceases to flow in order not to bruise the flesh or muscles unnecessarily.

A tourniquet may cause pain and swelling of the limb, and if left on too long may cause the limb to die. Therefore, about every half hour or so loosen the bandage very carefully, but if the bleeding continues, pressure must be applied

again. In this case apply the pressure with the thumb for five or ten minutes, as this cuts off only the main artery and leaves some of the smaller arteries and the veins free to restore part of the circulation. When a tourniquet is painful, it is too tight, and should be carefully loosened a little.

A broken bone is called a fracture. The great danger in the case of a fracture is that the sharp, jagged edges of the bones may stick through the flesh and skin, or tear and bruise the arteries, veins, and muscles. If the skin is not broken, a fracture is not serious, as no germs can get in. Therefore, never move a person with a broken bone until the fracture has been so fixed that the broken ends of the bone cannot move.

If the leg or arm is broken, straighten the limb gently, and if necessary, pull upon the end firmly to get the bones in place. Then bind the limb firmly to a splint to hold it in place. A splint may be made of any straight, stiff material —a shingle or piece of board, a bayonet, a rifle, a straight branch of a tree, etc. Whatever material you use must be well padded on the side next to the limb. Be careful never to place the bandages over the fracture, but always above and below.

Many surgeons think that the method of binding a broken leg to the well one, and of binding the arm to the body is the best plan in the field,

as being the quickest, and one that serves the immediate purpose.

When a fracture is accompanied by an arterial wound do not attempt to reduce the fracture. Stop the bleeding which will result in death otherwise, and leave the fracture for later treatment.

With wounds about body, chest and abdomen, you must not meddle, except to protect them when possible without much handling with materials of the packet.

The symptoms of *fainting, shock,* and *heat exhaustion* are very similar. The face is pale, the skin cool and moist, the pulse is weak, and generally the patient is unconscious. Keep the patient quiet, resting on his back, with his head *low.* This last is especially important. Loosen the clothing, but keep the patient warm, and give stimulants (whisky, hot coffee, tea, etc.)

In case of *sunstroke* the face is flushed, the skin is dry and very hot, and the pulse is full and strong. In this case place the patient in a cool spot, remove the clothing, and make every effort to lessen the heat in the body by cold applications to the head and surface generally. The head should be comfortably raised. Do not, under any circumstances, give any stimulants or hot drinks.

In case of *freezing* and *frostbite* the part frozen, which looks white or bluish white and is cold, should be very slowly raised in temperature

by brisk but careful rubbing in a cool place and never near a fire. Stimulants are to be given cautiously when the patient can swallow, and followed by small amounts of warm liquid nourishment. The object is to restore the circulation of the blood and the natural warmth gradually and not violently. Care and patience are necessary to do this.

Being under water for four or five minutes is generally fatal, but an effort to revive the apparently drowned should always be made, unless it is known that the body has been under water for a very long time. The attempt to revive the patient should not be delayed for the purpose of removing his clothes or placing him in the ambulance. Begin the procedure as soon as he is out of the water, on the shore, or in the boat. The first and most important thing is to start artificial respiration without delay.

The Schaefer method is preferred because it can be carried out by one person without assistance, and because its procedure is not exhausting to the operator, thus permitting him, if required, to continue it for one or two hours. Where it is known that a person has been under water for but a few minutes, continue the artificial respiration for at least one and a half to two hours before considering the case hopeless. Once the patient has begun to breathe, watch carefully to see that he does not stop again. Should the

breathing be very faint, or should he stop breathing, assist him again with artificial respiration. After he starts breathing, do not lift him, nor permit him to stand, until the breathing has become full and regular.

As soon as the patient is removed from the water, turn him face to the ground, clasp your hands under his waist, and raise the body so that any water may drain out of the air passages while the head remains low.

Schaefer Method.—The patient is laid on his stomach, arms extended from his body beyond his head, face turned to one side so that the mouth and nose do not touch the ground. This position causes the tongue to fall forward of its own weight and so prevents its falling back into the air passages. Turning the head to one side prevents the face coming into contact with mud or water during the operation. This position also facilitates the removal from the mouth of foreign bodies such as tobacco, chewing gum, false teeth, etc., and favors the expulsion of mucus, blood, vomitus, serum, or any liquid that may be in the air passages.

The operator kneels, straddling one or both of the patient's thighs, and faces his head. Locating the lowest rib, the operator, with his thumbs nearly parallel to his fingers places his hands so that the little finger curls over the twelfth rib. If the hands are on the pelvic bones, the object

of the work is defeated; hence the bones of the pelvis are first located in order to avoid them. The hands must be free from the pelvis and resting on the lowest rib. By operating on the bare back it is easier to locate the lower ribs and avoid the pelvis. The nearer the ends of the ribs the hands are placed without sliding off the better. The hands are thus removed from the spine, the fingers being nearly out of sight.

The fingers help some, but the chief pressure is exerted by the heels (thenar and hypothenar eminences) of the hands, with the weight coming straight from the shoulders. It is a waste of energy to bend the arms at the elbows and shove in from the sides, because the muscles of the back are stronger than the muscles of the arms.

The operator's arms are held straight, and his weight is brought from his shoulders by bringing his body and shoulders forward. This weight is gradually increased until at the end of the three seconds of vertical pressure upon the lower ribs of the patient the force is felt to be heavy enough to compress the parts; then the weight is suddenly removed; if there is danger of not returning the hands to the right position again they can remain lightly in place, but it is usually better to remove the hands entirely. If the operator is light, and the patient is heavy, the operator can utilize over 80 per cent of his weight by raising his knees from the ground, and

supporting himself entirely on his toes and the heels of his hands—the latter properly placed on the ends of the floating ribs of the patient. In this manner he can work as effectively as a heavy man.

A light feather or a piece of absorbent cotton drawn out thin and held near the nose by some one will indicate by its movements whether or not there is a current of air going and coming with each forced expiration and spontaneous inspiration.

The rate of operation is 12 to 15 times per minute, and should not exceed this; the lungs must be thoroughly emptied by three seconds of pressure, then refilling takes care of itself. Pressure and release of pressure—one complete respiration—occupies about five seconds. If the operator is alone he can be guided in each act by his own deep, regular respiration, or by counting, or by his watch lying by his side; if comrades are present, he can be advised by them.

The duration of the efforts at artificial respiration should ordinarily exceed an hour; indefinitely longer if there are any evidences of returning animation, by way of breathing, speaking, or movements. There are liable to be evidences of life within 25 minutes in patients who will recover from electric shock, but where there is doubt the patient should have the benefit of the doubt. In drowning, especially, recoveries are

on record after two hours or more of unconsciousness; hence, the Schaefer method, being easy of operation, is more likely to be persisted in.

Aromatic spirits of ammonia may be poured on a handkerchief and held continuously within 3 inches of the face and nose; if other ammonia preparations are used, they should be diluted or held farther away. Try it on your own nose first.

When the operator is a heavy man, it is necessary to caution him not to bring force too violently upon the ribs, as one of them might be broken.

Do not attempt to give liquids of any kind to the patient while unconscious. Apply warm blankets and hot-water bottles as soon as they can be obtained.

As a rule, soldiers do not need much encouragement to learn to swim. It is great sport for them and in the field, after long and hot marches, practically all of them want to get into the water. Being mostly young and venturesome, they are always taking chances—diving into streams without first having determined the depth or whether there are any rocks or logs close to the surface. In my own regiment there have been a number of valuable officers and men who have been drowned or broken their necks by diving into shallow water. Many soldiers venture into strong

currents without being strong swimmers, so that a proper precaution always to be taken by soldiers, whether swimming together or as individuals, is to look around and see how they would help each other or themselves in difficulty. As they usually swim near camps, it is well to take a lariat or rope with them to use in case of emergency. In crossing streams in boats soldiers should take off their ammunition and equipment. In wading or fording streams the same should apply.

III

The Rifle

WHEN joining his organization, the soldier is issued at once his uniform, arms and equipment, and from that moment he becomes responsible for their safe keeping, their care, and so handling them as to feel like a new man and soldier. Their appearance and use—with them his life is bound up. He should have a feeling regard for his best friend, the rifle, and should see that it receives his constant care and gain the confidence that comes from handling it like an old soldier. Even to one accustomed to the use of arms in civil life, excepting in rare cases, the handling and use of the army rifle is a new game, unless he has been a member of the National Rifle Association or served in the National Guard. Every soldier should know all about his weapon —the nomenclature, safe handling, and accurate and rapid use, not only as a lone rifleman, but as one controlled, directed and disciplined with his comrades. One of his first duties is to learn to shoot straight as an individual, and to protect himself in the charge and in hand-to-hand fighting with the bayonet. Later

on he may have the opportunity of serving in the machine-gun company and handling and throwing bombs and grenades without being more dangerous to himself and his friends than to the enemy.

Nomenclature

The rifle used throughout the United States service is officially known as the United States rifle, caliber .30, model of 1903, commonly spoken of as the "Army Springfield" because it was first manufactured at the Arsenal, Springfield, Mass. It is the lineal descendant of the long old squirrel rifle of our forefathers, famous as the weapon of Morgan's riflemen and their Southern comrades at King's Mountain; the best friend of Daniel Boone, Davy Crockett, Kit Carson, and a long line of our pioneers, scouts and trappers. Flintlock at first, succeeded by the percussion cap, until the radical change in the latter years of the Civil War when the Berdan rifle and the Spencer carbine surprised the Confederates and made the select troops in the Union forces so efficient in the last years of the war. It was rapidly followed by the Sharpe, and the first Springfield model which persisted through the Indian wars until '92, when the first magazine rifle, the Krag-Jorgensen, was imported and gave us our first experience with smokeless powder and really rapid fire. The Spanish Mauser plainly showed its superiority

during the campaign in Cuba, so that, with it as a model, our Ordnance Department developed the present most effective weapon which has been used since 1903. For hand-to-hand fighting and to give confidence in the charge there is the long, sharp bayonet, which is always loaded and with which the soldier goes at his enemy with blood in his eye.

Complete without the bayonet the rifle weighs about 8½ pounds, and the bayonet about 1 pound. The four grooves cut in the bore spirally like a corkscrew grip the bullet as it passes through, making it spin on its axis, increasing the range and accuracy by making it keep point foremost in flight. This is called "rifling," and the gun is so called because of these grooves. The raised portions between grooves are "lands." Caliber means the diameter of the barrel measured from land to land. The caliber of the rifle is .30 (30-100 of an inch). The bullet of the ball cartridge has a muzzle or initial velocity of about 2,700 feet per second. This means that when the bullet leaves the muzzle it is going at that rate of speed. The bullet will go farthest when the barrel is pointed upwards at an angle of nearly 45 degrees above the horizontal. It will then strike level ground 4,982 yards (about 2¾ miles) away. This is called the maximum range of the rifle, but the greatest range for which the sight is marked is 2,850 yards.

The Rifle

Every soldier should know the names and uses of the parts of his rifle. Memorize at once the number of your rifle. The Ordnance Department publishes a pamphlet, "Description and Rules for the Management of the United States Rifle," copies of which are in every organization. Everything is there explained in detail. The enlisted man is not allowed to take his rifle apart, except the bolt and magazine mechanisms, without first getting permission from a commissioned officer.

The rifle must be used just as it is issued by the Ordnance Department, without any change except that the wood of the upper band may be worked down under the supervision of a commissioned officer. Don't try to polish any part of the rifle that is blued. Don't put any part of a rifle in a fire, or file any part, or use sandpaper, emery paper, or powder, or anything else that cuts or scratches. If the trigger pull doesn't suit you, consult your company commander. Never use abrasives to clean the bore, nor clean with a rod from the muzzle end. This last wears down the lands at the muzzle and is a cause of inaccuracy. Many rifles have been ruined by this practice.

Handling the Rifle

The following rules from paragraph 75, Infantry Drill Regulations, are important:

The piece is not carried with cartridges in either the chamber or the magazine except when specifically ordered. When so loaded, or supposed to be loaded, it is habitually carried locked; that is, with the safety lock turned to the "safe." At all other times it is carried unlocked with the trigger pulled.

Whenever troops are formed under arms pieces are immediately inspected. A similar inspection is made immediately before dismissal. If cartridges are found in the chamber or magazine they are removed and placed in the belt.

The cut-off is kept turned "off" except when cartridges are actually used.

The bayonet is not fixed except in bayonet exercises, on guard or for combat.

Be sure that when the piece is locked the safety lock is turned *fully* to the right. If it is turned not quite far enough and the trigger is pulled, the piece may be discharged when the safety lock is next turned to the "ready" position.

After any duty out of ranks draw back the bolt, look at the chamber and magazine, and see that your rifle is empty. Never put your rifle away loaded except when ordered to do so.

Always guard your rifle carefully against injury. If it is in good order and shoots accurately, it may some day save your life. Do not drop it or place it so that it is apt to fall. Special care must be taken not to strike or bend the sights.

It is best to keep the cover on to protect the front sight. Be sure to lay down the rear sight after finishing firing. In coming to "order

arms" at drill lower the piece *gently* to the ground.

Do not lay the rifle on the ground unless you have to. Dampness will warp the stock and spoil the accuracy.

Be especially careful to keep the muzzle off of the ground. Dirt inside the barrel is liable to make it burst when fired.

You cannot eject the empty shell or loaded cartridges from the magazine unless you draw the bolt fully to the rear; you should be careful about this, especially in rapid fire. Draw the bolt back quick and hard.

If there is a misfire it is not safe to draw back the bolt at once, as it may be a hang-fire. Instead of drawing back the bolt, cock the piece by drawing back the cocking piece and try again. A misfire is often caused by not pressing the bolt handle fully down or by raising it with the hand when aiming. Be sure the handle is pressed fully down before firing.

Keep the receiver free from unburned grains of powder which, when many rounds are fired, sometimes interfere with closing the bolt.

Do not get in the habit of leaning on the muzzle of your rifle with elbow or hands. It is a rookie trick. Of course there is no danger of an unloaded rifle going off, but many accidents have been the result of "not knowing it was loaded."

Cleaning the Rifle

The bore of the rifle must be kept clean and free from rust. Clean it as soon as the firing is over. Never postpone this.

How to Clean. Take out the bolt. Swab out thoroughly from the ***breech end*** with the cleaning rod and a patch of canton flannel about 1¼ inches square, wet with Hoppe's Powder Solvent No. 9. After it is thoroughly clean, dry it out by running through with clean dry rags. Then grease thoroughly with a clean rag soaked in "Three-in-One" oil to prevent rust. If no cleaning rod is at hand, use the pull-through in the butt of the rifle, drawing the brush and rag from the muzzle toward the breech. Clean and lightly oil the bolt and all cams and bearing surfaces, preferably with "Three-in-One" oil, or the sperm oil in the small arms oiler in the butt of the piece. If the rifle is not to be used, repeat this operation after twenty-four hours.

Shooting Straight

Every soldier is keen about shooting, and his interest lasts through any amount of work and training as long as he can see the results of his work; but he must know that to be a good, consistent, steady shot, both on the range and in battle, every one of the wrinkles of the expert must come involuntarily, as the result of long

practice and following the progressive course of instruction laid down in the Small Arms Firing Regulations. After learning the habits of his rifle, he must cultivate instinctive habits of handling it and using it, like a third arm, first by position and aiming drills.

Thus, when a novice on a battle field is shooting at a target, this target being a man, he has to think as to whether he is paying proper attention to the following things: the position of the feet if standing, of the body if lying down; of the butt of the gun against the shoulder or arm; whether or not the gun is canted; the position of the left arm for the body rest; the position of the right arm to get the greatest degree of steadiness; holding the head to keep the nose out of reach of the recoil; whether the eye is shut or not; the taking of a long breath; holding the breath while pulling the trigger; whether a full or only a half sight be taken; bringing the front sight tangent to a certain portion of the target; selection of the point of aim; proper use of the notch of the rear sight; squeeze of the trigger, and observation of the strike of the bullet after firing. All these are habits of the expert shot, without his thinking about them. On the other hand, the novice, in the midst of excitement, is trying to think of all these things, and so fails to function properly—gets rattled, jerks the trigger, or otherwise fires wildly. A thorough course in

the position and aiming drills is absolutely necessary, and by their means a man may be made a good shot before he has ever fired at a target. Throughout the target season soldiers should practice these drills constantly. The most important of the position and aiming drills are the lying down and kneeling positions, as they are almost always used on the field of battle. They are also more difficult, and they should be practiced the more. These drills should be followed by gallery practice and then the course on the target range as laid down in the Firing Regulations, followed by firing problems and combat exercises for the teamwork.

The apparent dimensions of a visible target vary inversely as the distance; that is, the apparent dimensions of a target at a distance of 1,000 yards are one-tenth the apparent dimensions of the same target at 100 yards. The visual area, therefore, of a target at 1,000 yards is one one-hundredth of the visual area of the same target at 100 yards; that is, a man at 1,000 yards' distance is 100 times as hard to hit as a man at 100 yards. This explains why, in certain battles, a hit is made for every 100 rounds of ammunition fired, while in others it seems to require 1,000 rounds of ammunition to hit a man.

In the close range fighting on the western front in France, where there is little time or chance for long-range firing, the great importance of

rapid fire at short ranges has been impressed on everybody, and quick and sure handling of the piece, whether standing, kneeling, lying down, running or crawling.

Every soldier should learn to fire with some degree of accuracy at least 20 shots per minute, and aspire to getting off 25.

To shoot well a man must be in good physical condition. The eye, the muscles of the body, and the nervous system must work in unison with one another and with the mind. The best expert shots keep so by constant practice. Take advantage of every opportunity to practice aiming and squeezing the trigger, and always aim at some particular object. Put a black paster on the wall of your quarters, or on a stake near your tent and frequently aim at it and squeeze the trigger. When in the field or on the range, pick out small, clear-cut targets in every direction, estimating the distances and setting your sights to them, and squeeze your trigger again, holding on the target. Every man who is not badly defective in vision can become a good shot if he puts his mind to it and keeps practicing on the lines of experience as laid down by the Small Arms Firing Regulations.

The soldier who is keen about shooting and becomes an expert, not only enjoys it as a game, but is privileged to go to the National and Army shoots and compete with the best shots of this

and other countries. Sooner or later he is also picked out as a noncom., for most good shots are good all-round soldiers. Details as sergeant-instructor are open to him with the National Guard, and he has the opportunity of attending the Army School of Musketry where the experts are trained as instructors and learn the final finesse of the game. Every soldier too should keep his record throughout his service. The best of the score books furnished soldiers is the "Bull's-eye" score book, published by "Arms and the Man," Washington, D. C., from which much of the foregoing advice has been taken or been suggested.

Bayonet Training and Combat

A bayonet fixed on the Springfield rifle makes the infantryman a descendant of the ancient spearman and pikeman and gives him a murderous reach of about five feet. It has played an important part in the Great War, especially in the hands of the French and Russians. Like the saber in the hands of the cavalryman, it may not result in causing many deaths or wounds, but it has a moral effect for the man who handles it of making him ready and eager to reach his enemy in a charge, and a very demoralizing effect on the enemy. With the bayonet fixed a gun is always loaded.] The infantry soldier should be taught bayonet fencing to make him active and

quick in hand-to-hand combat, train his eye and steady his hand, and to give him absolute confidence in himself. The movements in training for bayonet exercises are given in Infantry Drill Regulations (fourth volume).

In training for the assault, soldiers should be made to run, jump and rush in open spaces, carrying the bayonet at the charge. Bayonet fencing alone is in itself not an aggressive training. The hesitation that arises in hand-to-hand fighting from fencing alone is somewhat demoralizing; it tends to caution which should be overcome by charging over distances at an assumed enemy. The Frenchmen find that a charging line by lowering the bayonets to the height of the waist and determined advance together is most demoralizing to the enemy and almost invariably causes him to run.

The training exercises carried out by one company of Frenchmen to prepare for the attack first were:

First: a brief review of the movements, then fencing on the run. Then running, shout "Halt! Thrust! Thrust again!" They started again, climbed the slopes, lunged and relunged furiously. They got winded, so much the worse—but everyone ran, descended the slope stabbing and stabbing again, getting excited and feverish, the officers and noncoms. galloping more furiously than the rest. Afterward there was fencing with the dummy. Stuffed sacks full of straw, made smaller each day to provide smaller target and oblige the men to be more accurate in their blows. A course was laid

out of about seventy-five yards in quite a tangled wood. Obstacles were placed in the course by cutting down bushes. Here and there were placed dummies. Thus on a fairly short course the men were obliged to run, jump, bend down, attack, and this in every manner, because the dummies were placed in such a way that the men had to combine his attack with right face, left face, face to the rear, or crossing an obstacle. This exercise particularly interested the men, and as we measured the time taken by each one to run the course, in a few days it had developed in an astonishing manner their agility and suppleness and gave nerve to those who lacked it.

Afterward there were attacks in groups and then charges by platoon. Here we sought, while giving the greatest impulsion and fury possible, to keep cohesion and give to each one the confidence of being elbow to elbow, and to the enemy the terrifying impression of a wave that nothing could stop. We marched at charging pace, and as we charged, lowered the bayonets in a single movement to the height of the waist.

IV

March Discipline

A HORSE, no matter what his quality and conformation, is only as good as his four legs. So an infantryman, no matter how strong and well set-up he may be in appearance, will last just as long as his feet. The best marching soldiers probably in the world as a nation are the French. The French poilu is not anything like as smart-looking a soldier as his comrade of the British army. He looks decidedly sloppy on the march. But in large bodies they stump off twenty-five miles a day without any apparent effort and carry most of fifty pounds to boot. There is no stiffness nor jolt to a Frenchman on the march; he seems entirely relaxed, and his cheery spirit and soldierly pride are just as much in evidence at the end of a long day's hike as at the beginning. The American soldier is well equipped in every way, and he can learn and train himself to march just as well as the Frenchman, but he must know that the habit and wrinkles of marching like the Frenchman—like the best of his own regulars—come from hitting the trail properly shod and properly packed. The wrinkles known to the

tried and trained soldier he must pick up from the regulars with whom he associates, especially the noncoms. He must not straggle and he must play the game as a member of the great team.

There is a reason for every bit of march discipline and every habit insisted upon by his commanding officer. The best marching soldiers in our annals were those of Stonewall Jackson's famous Stonewall Brigade. It was a flying column and marched all around its opponents. "His victories were won rather by sweat than by blood, by skillful marching than by sheer hard fighting. The enemy, surprised and outnumbered, was practically beaten before a shot was fired and success was obtained at a trifling cost." (Henderson.)

Mr. Thomas Nelson Page told me of sitting on the fence of his father's plantation when the Stonewall Brigade marched down the Niggerfoot Road . . . and struck the Union right at Mechanicsville. He remembers particularly when the halt was sounded that every soldier promptly flopped down in the road, like a tired dog, and relaxed into complete rest until the onward march. On that very march Stonewall Jackson threatened to shoot every straggler. There was no straggling. Our cavalry in the Indian wars never had any stragglers, for every pony soldier knew if he were left behind the

Indians would scalp him. So that the spirit and march discipline has everything to do with getting there all together.

No soldier should leave ranks at any time on the march without permission. An army on the march must swarm along like a column of insects. Any straggling or undisciplined marching affects the whole column. The careless habits of the individual or the small party operating has no place in the march of large bodies.

Private property must be absolutely respected. Soldiers leaving ranks to loot, or to drop into orchards or country stores, is disorganizing. Several National Guard regiments on the border recently became absolutely disorganized by a severe storm. If the officers of a command allowed their men to get out of hand when pelted by rain, what a mess there would be under a rain of bullets!

A column on the march keeps to the right side of the road, so that the left may be available for mounted men, messengers and staff officers. At rest, soldiers sit or lie on right hand side, officers opposite their companies on the left side.

Treasure your canteen of water. Train yourself not to drink on the march. If absolutely necessary, simply rinse your mouth, or drink a very little at a time. Remember what you would do under exhausting circumstances in baseball or football.

The Twelfth New York, during the summer of 1916 in Texas was so trained that the regiment could knock off twenty-five miles at a stretch without stragglers, and learned to take great pride in carrying their packs like old soldiers; and on Thanksgiving Day, in a point to point race of three miles there were 104 entries, every soldier fully packed and equipped for the march, with 100 rounds of ammunition, and nearly all finished, the winner doing the three miles in twenty-one minutes plus, across a rough country, over drainage ditches and through chaparral. Not a man was hurt by the test. After four months of such training two divisions under General Parker operated against one another with long marches and frequent deployments without any distress or straggling, and enjoyed the game so much that most of the soldiers were sorry when the maneuvers were over.

The mob spirit is very close under the skins of all but very seasoned troops. Every little relaxation of road or camp discipline is a concession to this spirit, lends encouragement to it, and physical weariness, lack of sleep, excitement, hunger, cold, or extreme heat drive men rapidly in this dangerous direction. Absolute disregard for the individual, even to rough measures, and the sternest discipline for stragglers on the march, men who leave the ranks at rests or their company streets in camp, will eventually

crush the mob spirit and will eventually result in a pride of discipline.

It is as easy to train troops to march fast as slowly. The Twelfth Infantry averaged three miles per hour including halts; perhaps a little less on exceptionally hot days, in a march of nearly one hundred miles. Their pace was uniformly one hundred and twenty steps to the minute in route march. They made camp in time to settle themselves comfortably, wash and clean their clothes, get a good meal before dark, gather wood for big bonfires around which they gathered to sing and swap yarns.

Rests should be frequent and short. The Twelfth marched twenty-five minutes and rested five in every half hour and on the hour and half hour. All watches set together and every element of the column halted and rested on the hour and the half—five minutes about the length of time that men absolutely rest. They become restless after this or stiffen. In resting, they should lean back on the packs, drop the arms by the side, chest up and unrestricted with a few deep breaths, hat brim over the eyes, cartridge belt thrown open, etc. On the whistle, there should be a prompt getaway, no fiddling around. When very hot, files may be opened to greater intervals. Each soldier should see the road in front of him and not be annoyed by muzzle of rifle of man in front. Singing should be encour-

aged—mouth organs great help—and ridicule inspired for men who are taken in ambulance or attempt to shirk the full pack.

The business of every man is to get over the road—"kill it," as the soldier says.

Obstacles or bad places in the road must be handled so as not to check the rate of march. Instead of the head of the column slacking up after passing an obstacle for the rear to close up, the reverse should be practiced. Each head of column and each element in the column down to each set of fours fight their way across at increased pace so that the element or man in the rear never checks his pace. I have seen an entire regiment meet a serious obstacle and the last man in the column never check his stride for a moment. The men soon learn to love it and you can hear cheers and shouts as each part of the line bucks the obstacle. Men hate checks and delays, it puts them in bad humor, while the foregoing method really enlivens the march and adds incredibly to the pace. Streams, mudholes, deep ditches or steep banks become hazards met cheerfully instead of with growl.

Never lengthen the column by marching in twos or files, except in extreme necessity. Such formations result in immediate slackness.

March the little men in front most of the time, but change units, battalions and companies in column daily.

March Discipline

The "getaway" from camp has a most important bearing on the march. An orderly, well-planned, and therefore cheerful breaking and cleaning of camp puts the best foot of a command foremost and will keep them up to best form all day. Likewise making camp is equally important. The site should be selected in ample time and the company flags collected in time to be set long before troops arrive, so that lines are formed immediately on arrival and packs unslung. Their mood is very different when they must stand around or are changed several times.

At night "taps" should be sounded early, depending on hour of start the next morning. It is urgently important that all commanders see that men pitch their tents, make proper beds and that all noise and talking cease at taps. There are always a few men in every company who will continue to laugh and talk for hours, thus disturbing their comrades who seek and need rest.

A cheerful, even noisy reveille, sounds fine to a commanding officer, with his ear tuned to camp sounds which convey so much to him. Then a good breakfast, time for the men to relieve themselves, a tense moment as every man stands to his post at the "general" with a great shout at the last note and keen rivalry in the race to be ready first, with friendly chaffing of the slow men or units—all mean that a good day's work will be done.

In case of storm in camp, make men work. Do not let them stop to think of their misery. Get wood, build big bonfires, make hot coffee, dig ditches—and every officer in the middle of his men, without a particle more clothing or protection than they have.

I have many times watched a column at rest with watch in hand. Relaxation is complete for about four and one-half minutes. Then a restlessness becomes evident which steadily increases until in about six minutes relaxation has apparently ceased for a majority of the column.

I have carefully watched from the rear flanks a column regiment on the march. There was always an officer whose sole duty was to set the pace with watch in hand. I have started the pace at 114 per minute; noted the grumble and checking in the column, the sound of the column was not satisfactory. Increased to 116 and 118 there was noted considerable improvement. At 120 the "rate" of the column settled to the steady hum as you might say of a motor, which has struck its most efficient rate of revolution. The swing carries through the whip at the tail and the check at the heads of units practically disappeared and evidently all felt the machine was working smoothly and efficiently.

The following notes are taken from Mercur's "Art of War," one of the most interesting and

well-thought-out volumes ever published on the subject:

For large bodies of men marching continuously day after day, the daily distances covered are at first sight surprisingly small. Twelve miles a day is fair going, fifteen miles is good and twenty miles a day continuously is regarded as forced marching.

Roberts's march of 318 miles from Kabul to Kandahar took twenty-three days, and Huidekoper tells in his paper on the Great War that Friant's division covered seventy-eight miles in forty-six hours, in time to arrive at Austerlitz, where on the following day he fought so hard that he lost 40 per cent of the surviving strength. The most interesting chapter in Napier's "Peninsular Wars" tells of how the Light Division forced itself to Talavera, making sixty-two miles in twenty-six hours. Such marching can be achieved only by trained soldiers and experienced officers, taking infinite pains and paying attention to a host of details, each trivial in itself.

Speed

The ordinary quick time is that of 120 thirty-inch steps a minute. This gives us the round figure of 100 yards a minute, which is so important a datum in the calculation of distances when the commander of a unit has to get his force at a given point at a given time to take its allotted place in a column of march. Allowing for halts, this works out at about three miles an hour, but the larger the force the more slowly it marches and two and a half miles an hour for a brigade or two for a division is a good average.

Duration

It will be seen that the average fifteen-mile march will take a brigade six hours and a division eight hours. When you realize that a division, with all its impedimenta in column of march, covers a length of fifteen

miles of road, it is much easier to appreciate the difficulties which occur when a wagon breaks down and blocks a narrow way near the head of the column. At the best, the rear guard, at the end of the fifteen-mile march, can only reach the point from which the advance column moved off in the morning and the normal eight hours which the rear guard should occupy on its day's march will be increased by every delay which checks the weary column ahead as it gradually breaks down the road along which it slowly labors on its way.

Rhythm

Rhythm of marching will place the tall and short men at a mechanical disadvantage. On the other hand, walking is so automatic an action that it is said to be the only exercise which can be continued during sleep. It must therefore be largely under subconscious control. Any factor which increases this subconscious control diminishes purposeful mental effort and thus economizes mental strain. Marching in rhythm, and especially to music or singing, is a valuable aid to subconscious control in marching and probably more than neutralizes the loss by mechanical disadvantage which results from maintaining an uniform length stride for men of different heights. Men should alternate between marching in step, marching at ease, and marching to song. In hot weather the chest should be bared and sleeves rolled up.

Effects of Water Loss

Water forms 66 per cent of the total body weight. The loss of one gallon involves danger, the loss of one and a half gallons causes death. One quart can be lost without inefficiency resulting, so that at the end of seven and a half miles marched without water the men should be quite fit. During the loss of the next quart slight inefficiency gradually appears, and at the end of fifteen miles there is a genuine "necessity thirst," but still there is but slight inefficiency. During the loss of the third

quart inefficiency becomes marked, if no water has been drunk, and after the loss of four quarts during a thirty-mile waterless march the man's condition is becoming dangerous.

On a fifteen-mile march the contents of the water bottle should not be touched until the halfway point is reached. The contents of the canteen should then suffice to take the men into camp without the bottle being refilled, or inefficiency being experienced.

The precise data thus obtained afford invaluable aid in the maintenance of water discipline, the enforcement of which has been made less firm by the fear of the combatant officer that strict discipline in this matter might inflict genuine distress on the men. Owing to uncertainty as to the precise point at which habit thirst becomes necessity thirst, no definite orders have been laid down. Allowance must be made for the increased sweat occurring on hot days, but even so, there is a margin of a quart of water always between the man's needs and the onset of even slight inefficiency due to loss of fluid.

The normal average requirements are that the men should get one quart of water at the end of every seven and a half miles marched, making allowance for high speed, increased weight carried, and high atmospheric temperature or humidity.

One of the most noticeable habits of the American soldier is guzzling water on the march. It is a habit which can easily be changed into one of saving your canteen of water until after the march, for the rest time, when it will do the most good, and when you will often most need it in a dry country. Under the hot sun, on the march, if thirst overcomes the will, drink as little as possible, rinse out the mouth, or if necessary, take small drinks frequently; but most old soldiers

discover that they can go without water until in camp or at rest. The sensation of thirst is due to a loss of water from the blood. It can be overcome only by restoring the proper amount of fluid to the veins. When overheated, or exhausted, or excited, the stomach's action is checked and no amount of water poured in will relieve the sensation, for the water remains in the stomach. This condition is exaggerated if the water be cold and the stomach be overloaded. A temporary cooling of the throat is the only result and one swig at the canteen tempts to another. Pain and distress follow. A small amount of *warm* water will relieve real thirst more readily than a large amount of cold water. A little sugar from the haversack taken with the water aids the stomach to absorb and pass the water into the blood.

Before starting on the march men should have a large amount of hot tea or weak coffee. In view of the great value of sugar, this should be freely sweetened. Men should be advised to suck a bullet or pebble on the march. The value of this lies in the fact that it keeps the mouth shut and therefore moist. The old campaigner will march all day without having recourse to his canteen. The difficulty is with the young recruit, who starts pulling at his canteen before he has marched two or three miles, thus promoting habit thirst and the necessity of refilling his

canteen from the first contaminated wayside source. The canteen should be refilled at the end of the first fifteen miles and at the end of every seven miles subsequently, thus preventing men from suffering from "necessity thirst," and there will always be a quart of water between them and any inefficiency from loss of fluid. The canteens should always be filled at night, either with sterilized water or with weak sweet tea or coffee. The canteens are thus sterilized and in the morning they are full of cold safe liquid. Tea is a better thirst quencher than water.

The features of good marching boots have been mentioned and the methods of preparing boots for the march have been described. It is probable that, contrary to general belief, the majority of cases of disability from sore feet are due to defects in the socks rather than in the boots; such as, undarned holes of which the edges ruck up into ridges, and bad darning. If, when wearing light woolen socks, there is still friction or blisters, it is advisable to wear two pairs of socks, the outer pair to be of cotton, thus taking the friction of the boot off the woolen pair worn next the feet.

When the socks are worn into holes and cannot be replaced, they may be substituted by a triangular piece of thin soft textile, preferably linen. The soldier places his foot on it with the toe toward the apex so that the material can be

brought up around and wrapped over the foot. In the absence of suitable textile material, thin greased paper may be substituted. Men should wash their feet in cold water, rubbing them with alum or spirit lotion to harden the skin if there be any tenderness. Clean socks and camp shoes should be put on when practicable. The socks worn on the march should be washed and kneaded until perfectly soft and then dried ready for the morning, when socks and boots will be clean, soft and comfortable. Of course, while it will often happen that this routine cannot be carried out daily, it should be adhered to as far as possible, and the consequent reduction in disability from sore feet will be surprising.

V

Clothing

THE soldier is given a liberal clothing allowance, and every bit of it supplied by the government is of good cut and quality. Properly cared for, it is smart and appropriate, and every soldier should take pride in it and remember that one of his most important duties is to look his part. Every American has a weakness for a soldier, and he expects him to look soldierly and show at a glance his superior feeling and training.

Every enlisted man has a clothing allowance of $48 for the first year of his term, with a subsequent allowance of $24 for each succeeding year. Out of this allowance he can easily, and must, clothe himself. The careful soldier can save money out of this sum, which is paid to him on his discharge. Some of the more expensive items formerly charged against the soldier's account are now issued free of charge by the government, and the soldier is responsible merely for their safe keeping and reasonable care. In this list are included the poncho, the overcoat and the blankets.

The old saw about an army moving on its belly is all wrong. An army—horse, foot, and guns—moves on its feet. It is a matter of tires and iron-shod hoofs and socks and shoes. But we will narrow the discussion here to the feet of the fighting men, the infantry, which forms the bulk of all armies.

If the army's feet are not sound it doesn't move far, and it can't move fast. And that is why, in the Medical Corps and in the quartermaster's division, you will find a disproportionate amount of official solicitude about feet as compared to legs or hands, or even heads. This concern is the same in all armies; and we are profiting by the trials and the mistakes taught us by the millions of weary feet which have followed the roads of Europe into battle. An infantryman will advance a day or retreat two days without food sometimes, but he won't advance on sore feet. Motor lorries will be loaded up with him going to the front, and ambulances lugging him away to the rear.

In the early weeks of the militia concentration on the Texan border practice marches developed physical unfitness in nearly every command. On short hikes of no more than six or ten miles a very large percentage of men fell out, to be gathered up by motor trucks and brought into camp or harvested by ambulances back to hospitals. These men fell out for a variety of reasons, but a great many of them refused to march any farther on account of sore feet. To begin with, marching and walking—as the average civilian, not a policeman or a postman, understands walking about his daily vocation —are two very different things. An infantryman on his feet carries about sixty pounds of dead weight: forty-five pounds or so of pack, eight pounds or so of rifle, and the rest in ammunition or separate equipment. He cannot choose his own gait, and he has to negotiate all kinds of ground, winter roads corrugated with frozen ruts, slippery trails of mud and water, rocks, hot sand. And more than half the time a change of shoes is for him a luxury; he is very apt to keep the same pair on night and day, wet or dry. If his shoes

are not right, or if his feet are not sound, he cannot last a week with a moving command; and it is entirely possible that he will even have trouble in a trench.

It was easy to account for a great many militia sore feet early in the summer. The machinery of the War Department ground slowly, and many regiments turned up in all kinds of quaint footwear made to be sat in or briefly stood in, but never to be hiked in over the rough gumbo of Texas. There were patent leathers, boots button, kid-top boots, low shoes with pointed toes and wide verandas running round them, sneakers, Congress gaiters, and "college shoes for college men," all bravely kicking up the dust or squeegeeing through the mud, hay-foot-straw-foot, along the border. No wonder Illinois fell out by their 20 per cent, or Virginia lay down in companies. No wonder New York lost ninety men by the roadside in six miles. Some of it was sun, some of it was faint heart; most of it was feet.

In those early weeks the trouble was due to no serious attempt at scientific shoeing at all. But as late as November a brigade formed of regiments from the District of Columbia, Mississippi, and West Virginia, after nearly five months spent in active duty at their State and border camps, made a three days' hike of only thirty-six miles from Fort Houston to Landa Park, Tex. "Scores of the militiamen," the report goes, "reached here in ambulances as a result of foot trouble." Every one of these militiamen in the ambulances was wearing a pair of regulation shoes issued according to the old mechanical requisition on the quartermaster's stores. The difficulty in this case was due to imperfect inspection and inaccurate requisition, a combination of bad system and misuse of good material.

In those days arose upon the border a prophet, an apostle to the weary and heavy laden. His name was Major William W. Reno, Medical Corps, U. S. A., and he was a voice crying in the Texan wilderness, saying: "They shall run and not be weary; they shall walk and not faint." Major Reno makes a profession of keeping the United States army on its feet. With him it is

more than a profession; it is almost a religion. Out of the experience of many years devoted to the study of pedal extremities he devised a system of inspection with a consequent form of requisition on the quartermaster's supply of shoes and socks. Army orders were issued which established that system for the regulars and for the organized militia in service. Under this established system, during the last six months, Major Reno has inspected 250,000 feet—not pairs of feet—and prescribed for them with a refinement which goes to the sixteenth of an inch.

Most men enter the service with some deformity or weakness in the feet. It is up to the soldier to find out from the surgeon what the weakness is and to set to work at once to cure his feet and make them sound by regularly established feet exercises, and above all, by having his feet properly shod. There are certain feet exercises in the Setting-up Manual, and they have proved of great help in the service. They are given here in the words of George Marvin, who wrote the above interesting article on "The Feet of the Fighting Men on the Border" for the "World's Work":

In Exercise I every man stands erect, with only his toes projecting beyond the edge of the board or the little depression he has dug in the ground. In this position he repeatedly—thirty times, generally—bends or attempts to bend his toes downward in a gripping movement reminiscent of his prehistoric ancestors. For Exercise II he moves forward a little until half his foot projects over the edge of plank or depression and goes through the same movement an equal number of times.

When it comes to Exercise III each man moves back until his entire foot rests on a flat surface, when, with-

out raising the body of the foot, the toes are curled back thirty times. In Exercise IV, in this same position, the direction is to separate all the toes thirty times, the way babies do and the way very few of the rest of us can do. In fact, the average facial expression of the enlisted man when Exercise IV is announced says eloquently: "It can't be done." Exercises V and VI are nearly the same. The toes are turned slightly in and the heels out, the weight of the body thrown on the outer edge of the foot, while the toes are bent downward and curled under the foot, or with the weight of the body on the heels the anterior portion of the entire foot is lifted as high as possible from the ground.

An infantryman is only as good as his feet, and sound feet are directly dependent upon the soldier's shoes. In garrison the regular soldier has his feet most carefully measured and his shoes most carefully tested, under the provisions of General Orders No. 26 of 1912; but in the camp and in the field the soldier himself, as well as his officers, must exercise the greatest care. Measurement for shoes should be taken over the socks, standing on one foot with weight on ball, with at least forty pounds weight on the back, to provide for the added expansion and swelling due to the pack on the back of the infantryman. The marching shoes supplied by the government are of excellent last and usually provide the width automatically. With the pack on the back, under no circumstances should the vacant space in front of the great toe be less than two-thirds of an inch, nor should there be pressure on the top of

the toes. Try on several pairs of shoes before deciding. Keep a careful record after experience of the proper size and width of your shoes. Before going into the field, be sure your shoes are absolutely serviceable, but never go into the field without having your shoes properly broken in. If this is impracticable by a certain amount of wear, stand in your new shoes in about two and one-half inches of water for five minutes, until the leather is thoroughly pliable and moist; then walk for about an hour on a level surface, letting the shoes dry on your feet. On removing the shoes a very little neat's-foot oil should be rubbed into the leather to prevent its hardening and cracking.

Light woolen or heavy woolen socks will be worn for marching. They will be large enough to permit free movement of the toes, but not so loose as to cause wrinkles. Darned socks or socks with holes must not be worn for marching. Start every march with clean feet and clean socks.

VI

Guard Duty

To walk guard is one of the soldier's most important duties. It is hedged around with many ancient rules and customs, and both in peace and war is a sacred trust. The soldier on guard duty is entrusted with the safety and security of the lives and property of the command. While the sentinel is on duty he is dignified by his responsibilities, and is treated with the greatest respect and formality by all officers and men. It is always a trying duty, and in war times, especially among savage tribes, often soul-trying. I have never felt so proud of the American soldier as when on guard among the Moros of the Lake Lanao region and Sulu, where in the darkness he was under constant danger of being jumped by murderous Moros determined to hack him up in fanatical rage, and where the sentries nearly always showed the sterling stuff of the American soldier at his best, often putting up splendid hand-to-hand fights and seldom showing the nervousness which must have been present throughout their night tours. The army station on Lake Lanao, in Mindanao, is named in honor and memory

of a private soldier, who, on sentry duty, killed five Moros and gave the alarm to the sleeping camp, saving many lives from the fierce attack of the fanatical Moros. Kiethley himself was mortally wounded in his hand-to-hand fighting with the Moros, and died after making his way over a mile from his outpost station to the main guard and giving the alarm, his outpost comrades all having been killed.

Whether in the nipping, eager air of a tour in the north, or fighting mosquitoes in the tropics, guard duty is of the most trying character, and the constant enemy to be fought on the part of the sentry is sleep. For that reason a sentry is usually obliged to walk his post, so that he may keep awake and alert. The temptation to sit down for a moment has been the ruin of many a sleepy soldier.

Sentinels are obliged to know their general and special orders; general orders being those that apply to all sentinels in the army; they should be memorized at once by all soldiers. Special orders are those that apply to the particular post and duties of the particular command. The general orders for sentinels in the army are:

1. To take charge of this post and all government property in view.
2. To walk my post in a military manner, keeping always on the alert and observing everything that takes place within sight or hearing.

3. To report all violations of orders I am instructed to enforce.

4. To repeat all calls from posts more distant from the guardhouse than my own.

5. To quit my post only when properly relieved.

6. To receive, obey, and pass on to the sentinel who relieves me all orders from the commanding officer, officer of the day, and officers and noncommissioned officers of the guard only.

7. To talk to no one except in line of duty.

8. In case of fire or disorder to give the alarm.

9. To allow no one to commit a nuisance on or near my post.

10. In any case not covered by instructions to call the corporal of the guard.

11. To salute all officers, and all colors and standards not cased.

12. To be especially watchful at night, and, during the time for challenging, to challenge all persons on or near my post, and to allow no one to pass without proper authority.

In the field and on outpost sentries' actions and duties are often modified from the strict conventions of the Guard Manual, and he must become the alert lookout for trouble of all kinds. The tendency in the service now is to post double sentries when practicable. They assist each other, keep each other awake, and can observe in all directions against surprise. Here the habits of the Indian and frontiersman are needed—acute hearing and sharp sight. At night the sentries should be below the sky line, often under cover themselves with an open range of vision, lurking or lying in concealment and letting the enemy walk and move. This kind of duty depends much

upon the enemy, and is covered more fully in Patrol and Outpost Duties.

It is the custom of the service for interior guards to be on duty for twenty-four hours, during which time members of the guard remain at the guardhouse or guard tent, subject to constant call. The guard is divided into three reliefs, with tours of duty of two hours on and four hours off. In the field small commands often post running guards at night, when the night tour is divided up among practically the whole command, so that each soldier has his tour of duty and can then sleep the remainder of the night; it is a frequent custom of the cavalry in the field for the picket-line guard.

The guard duty heretofore described, whose duties are laid down in the Guard Manual (much of which must be memorized by the soldier), has descended from the old-time routine guard of castles and walled towns and the protection of camps and government property. It is routine to a degree and, like many other apparently foolish performances, has been considered of value in the training and discipline of soldiers. Its ceremonies and conventions are in evidence and are part of the spectacular formations of the soldier familiar to the public. The citizen sees the sentinel pacing back and forth; he is interested and amused when visiting camps. But he is quite ignorant of the more important duties of the

sentry—the scouting and the patrols in the field for which the routine duty is in part a preparation—certainly as to the sacred duty of the sentinel on post and the habits of observation and staying awake and alert. Soldiers of the old time had a limited field of action, at least in literature. The sentry with his routine round frequently appears in Shakespeare. He appears in classical writings of Greece and Rome, and in the grand opera and light opera of all countries. Plutarch tells of his faithful companion the dog, and how the sleeping sentry was aroused from slumber by the geese of Rome. Gustavus, Turenne, and Napoleon all appear in sentry stories, inspecting and rewarding for vigilance, but neither Xenophon nor Cæsar nor other military narratives go into the functions of security and information on the march. The extensive military literature, manuals, text and reference books on the duties and experiences of outposts, scouts and patrols, is of recent origin. There is no duty of the soldier, after fighting, more important and at the same time so interesting to him than this. Every American boy has played Indian and is familiar with his wily ways. He has heard and read stories of spies, and fur traders and trappers, Mayne Reid and Cooper have given him many a hero, and Washington himself, in his early adventures on the frontier and his historic suggestions to Braddock, was part of the boyhood of every

one of us. In recent years such experiences have been studied and are available to Boy Scouts, and the young soldier takes most kindly to this part of his work. It is no trouble to have him read up the government publications and manuals, and train and work on Sherlock Holmes and Baden-Powell lines.

Troops on the march, whether in large bodies or small, when at a halt establish guards, no matter for how short a time, sending men out to cover every possible line of approach of an enemy. When in camp the larger and more important outposts, with a system of reserve supports, outguards and patrols, are always established. The soldier here finds himself on his own responsibility, and often under terrible strain at night in a hostile country. The routine of the interior guard is changed and the training and skill and intelligence of the individual is tested. Every surprise and ambush, and most military failures, can be traced directly to a failure on the part of the individual soldier or his careless commanders. Outposts in order from the main body are the reserve, the line of supports, the line of outguards, and the advance cavalry. In the daytime a single sentry at the outguard is usually provided by a Cossack post consisting of a noncom. and a relief of three men. The sentinel should be concealed where he may have the best field of view, and his comrades, also in com-

fortable concealment, should be where he can be seen and signal to them, not more than twenty or twenty-five yards away. At nighttime and in dangerous country two sentinels are posted together on a post that is known as a double-sentinel post. Here they support each other, watch in every direction, give each other security and keep each other awake. These posts were always used in the Moro country and they came to our common use throughout the service. The outguards whatever their form, should see and not be seen. They should know where their noncom. is and report to him every suspicious sight or sound and keep anybody, hostile or otherwise, from passing.

The following extracts from Andrew's "Fundamentals of Military Service" should be memorized by every soldier as a guide to outpost duty:

First: About myself and friendly neighbors.

My post is number——, outguard number——. The outguard is *there.* The post on my right is number——, outguard number—— and is *there.* The post on my left is number——, outguard number—— and is *there.* The support is *there.* Other detachments are *there* and *there. Such* and *such* patrols are operating in my front. *This* roads leads to——.

Second: About the enemy.

The enemy is reported to be *there.* I have seen him (describing exactly what hostile bodies I have seen) *there;* or, I have not seen him. I am to watch for him between *there* and *there.* If I see any unusual movement I am to report it at once to my outguard commander who is *there.* If suddenly attacked and forced

to retire or threatened with capture, I shall rejoin my outguard by going around *that way* so as not to disclose the position of my outguard to the enemy or to mask its fire.

Third: How to conduct myself on my post.

By day I shall make the best possible use of such natural or artificial cover as is available, standing, crouching, or lying down, and remaining stationary or moving about as will enable me to observe the sector assigned me to watch in the most efficient manner. I shall carry my piece at will, loaded and locked. I shall inform passing friendly patrols of what I have seen.

At night I shall remain standing, habitually stationary, moving about only for the purposes of observation. I shall not sit or lie down unless authorized to do so.

Fourth: When to fire on the enemy.

Unless specially ordered to fire on the enemy whenever seen I shall fire only under the following circumstances: (*a*) When suddenly attacked and there is no time to call the outguard commander, I shall fire rapidly, but with careful aim. (*b*) When a person approaching my post is ordered to halt and fails to do so, or otherwise disobeys me, I shall fire deliberately, taking careful aim, so as to be sure to stop him.

Fifth: Treatment of individuals approaching my post.

By day I shall allow only officers, noncommissioned officers, and detachments recognized as part of the outpost, and officers known to have authority to do so, to pass my post either in or out. I shall detain all others and notify my outguard commander.

At night when any persons approach my post, I shall come to a ready, halt them, and notify the outguard commander. Persons claiming to be deserters from the enemy are required to lay down their arms. If they are pursued by the enemy, I shall order them to drop their arms and I shall give the alarm. If they fail to obey me at once I shall fire on them. I shall halt bearers of flags of truce and their escorts, require

them to face outward, and at once notify the commander of the outguard.

Detached Posts.—These are practically the same as supports, but are sent to distant points outside of the line of supports and outpost proper, which the superior commander has deemed it necessary to cover. Their location is made known to all members of the outpost. If detailed to this duty you would proceed much as the support commander, and arriving at your destination would use your best judgment in disposing your strength to best cover the ground assigned you.

These general rules have interesting modifications for the soldier in minor campaigns, whether in the Philippines or on the border, as determined by the possible enemy. Our experiences in the Philippines and on the frontier in the days of Indian warfare have given our present noncoms. thorough practice, and many soldiers now on the border are so trained as to give confidence for the near future. Both the regular troops and the National Guard have outposted and patrolled the border from the Gulf to the Pacific, giving effective protection to their countrymen in persons and property.

Outposts in themselves can be of value only as points of support for vigorous and extensive patrolling and scouting.

VII

Patrolling

THE following notes and special instructions issued to the troops as a result of experience on the border are exceedingly valuable both in impressing upon the civilian the great amount of training and detail necessary not only for efficient work by junior officers and noncommissioned officers, but actually for their safety and the safety of those whom they command. It will be useless for the patriotic citizen struggling for preparedness to endeavor to learn these by heart. They must be impressed upon him by experience. This may be simulated by a study of tactical problems and by taking tactical walks. By going out into the country on an imagined mission and asking oneself from time to time just what should be done it is remarkable how soon one can have all the points indicated so impressed that there will be no danger of forgetting anything of importance.

HANDY INFORMATION FOR PATROL LEADERS

Kinds of Patrol: Visiting, Combat, Exploring, Reconnoitering, Flanking, Harassing, Pursuing, etc. F. S. R. Note 1, par. 23.

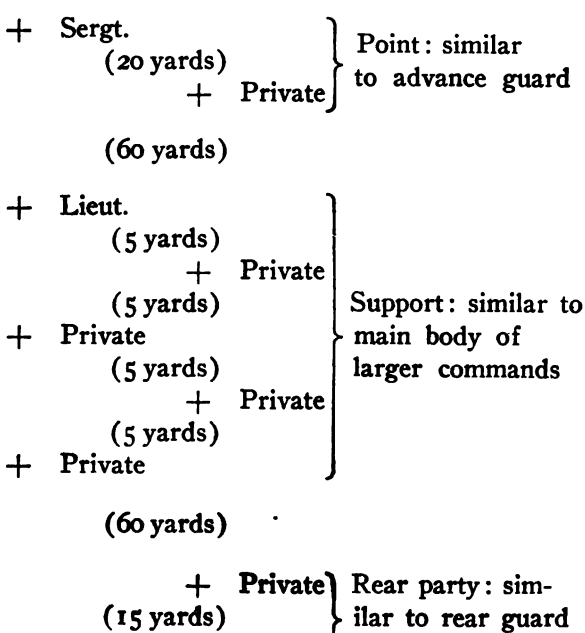
Patrolling

Number: Enough to insure effective reconnaissance. No more.

Strength: Two or three men up to as large as a company, depending on purpose and conditions. Never less than two men even after sending messengers or dividing.

Formation: Below is an example of a patrol formation:

Eight men on street or road:



Don't forget flank guard of at least one man when necessary.

1. Remember the foregoing is only a guide.
2. It is one of many possible patrol formations.
3. Change your formation to suit conditions.
4. Think, always think, and don't blindly follow fixed rules.

Formation will vary according to conditions. Think. Use your judgment. Formation should always be such as to insure the escape of at least one man in case of attack.

Composition: For any important independent mission: Patrol leader should be an officer.

To gain information: Patrol leader specially selected. Noncommissioned officer or officer.

Sent out from covering detachment:

Ordinary patrols between groups . . . .
Ordinary flanking patrols . . . . . } Patrol leader may be any intelligent soldier.
Ordinary outpost patrols . . . . . }

No member of patrol should have cold that would cause him to cough or sneeze. Do not select a "boozer" for important distant patrolling.

Patrolling

Patrol Leader

The patrol leader receives the following instructions and information *before starting:*

1. Information of the enemy.
2. Information of our own supporting troops.
3. Plan of our own commander.
4. The mission of his patrol.
5. The size of his patrol.
6. Where patrol is obtained.
7. A map is furnished.
8. General route of patrol.
9. Hour of departure.
10. Limits of country to be observed.
11. Location of other friendly patrols.
12. Time patrol is to return.
13. Latest hour first message should be sent back.
14. Where messages should be sent.
15. Time at which information must reach designated point.
16. Location of our own outposts.
17. Expected movements of our own command during absence of patrol.

When, as patrol leader, you receive your orders, think as follows:

1. What is my mission? Do I understand it clearly?
2. What is the location of the enemy?

3. Am I apt to meet the enemy's patrols, cavalry or infantry?
4. What am I to do if I meet the enemy's patrols? Form your plans ahead of time and then, if necessary, change the plans you have formed according to the accidents of the ground and other circumstances.
5. I must slip rapidly and unobserved through flat and open country.
6. I must stop and watch from high places using field glasses.
7. I must reconnoiter cross roads.
8. I must see that my retreat is not cut off.
9. I must advance boldly but cautiously.
10. I must not become careless nor for a single minute neglect a proper patrol formation and military precautions.
11. I must get my information back in time to be of use.
12. *I must accomplish my mission.*

The patrol leader does the following *before starting:*

1. Sets his watch with that of officer sending him.
2. Selects men specially qualified unless otherwise detailed.
3. Makes arrangements for start. Hour men are to be called. Breakfast or other meal before starting. Cook meal to be carried if patrol is to be gone more than six hours.

4. His equipment: Arms and ammunition, field glasses, pencils, maps, whistle, watch, message pad, notebook, compass.
5. Studies map.
6. Notes prominent landmarks.
7. Decides on plan.
8. Assembles and inspects detail and equipment.
9. Sees that men are physically fit.
10. Sees that canteens are filled with water or coffee.
11. Sees that men have the necessary cooked lunch in haversack.
12. Sees that accouterments do not glisten or rattle.
13. Sees that no man has any maps, letters or newspapers that might be of value to enemy in case of capture.
14. Assures himself men have had meal before starting.
15. Carefully explains mission to patrol.
16. Shows map, explaining to men principal roads and important features.
17. Tells men where messages are to be delivered.
18. Instructs men as to conduct, especially to keep concealed and avoid a fight.
19. Rehearses with men some simple set of signals.
20. Designates a second in command.

21. If mounted, sees that horses are not of conspicuous color.
22. If mounted, do not select horses that neigh.

The patrol leader does the following *after starting:*

1. Halts at the outpost and calls attention of men to position of outpost.
2. Points out the route and such landmarks as are of importance.
3. Questions the outpost sentry or noncommissioned officer as to any information of the enemy and our patrols.
4. Informs the noncommissioned officer and the sentry of the outpost by what route he is going, by what route he will probably return, and what time he will probably return.
5. On clearing outpost the patrol takes up a proper extended formation, distance from head to rear varying from 100 to 200 yards.
6. Flank reconnaissance is done by main body of patrol.
7. Keep to roads.
8. Proceed as rapidly as possible, consistent with safety and accomplishment of your mission.

9. Select high points for reconnoitering. Reach them rapidly and unseen.
10. Reconnoiter important crossroads as far as nearest crest or turn.
11. Be careful in passing through defiles not to be trapped. Reconnoiter first.
12. If you send a man out from patrol tell him where to go and where to rejoin.
13. Don't split your patrol unless absolutely necessary.
14. Approach houses and villages with caution.
15. Better to reconnoiter village from distance unless *necessary* to enter it.
16. Ordinarily keep out of inclosures.
17. Point out important landmarks to men as you go along.
18. Make necessary corrections on map.
19. Halt only in concealed places.
20. Put out march outpost when you halt.
21. If hostile patrol passes you, take his back trail. You are less liable to meet others than on new road.
22. Designate a place of assembly in case patrol is compelled to scatter to avoid capture.
23. Send written messages by two men if you can spare them. Give copy to each. Have them repeat message to you. Inform commander what your next position will be.
24. Don't let strangers get ahead of you.

Notes on Patrolling

Reconnoitering Patrol: Your commander will want to know the enemy's location, strength, and composition, movements, probable intentions.

Any Patrol: You can come in contact with the enemy in two ways: 1. By your own efforts. 2. The enemy may come on you unexpectedly. In either case be prepared. Decide quickly what it is you have encountered: (a) Is it a fixed outpost? (b) Is it a moving patrol? (c) Is it a moving covering detachment? Then, when you have decided, act promptly according to the requirements of your mission; remember, changing conditions may make it impossible for you to carry out your mission. But do not let mere physical difficulties, danger or hardship cause you to give up or half-heartedly attempt your mission.

Combat Patrol Leader

Any position or formation of your patrol that allows firing line to be attacked without warning is absolutely wrong.

You must place your combat patrol so that it can see more than the men in the flank of the firing line can see. Otherwise it is useless.

In practically all cases your combat patrol must be in advance of the firing line in order to gain necessary information in time to be of any use.

Patrolling

Your combat patrol must see that the enemy does not get within effective rifle range on the flank of the firing line.

After the action begins and during the entire fight, your combat patrol must maintain contact with the enemy on the exposed flanks.

General Notes

Infantry patrols are generally used for work within two miles of supporting troops, but cases arise where they must go to greater distances.

A patrol's mission is usually to locate the enemy's main body, or other important hostile body. When you gain contact, hang on until you have valuable information.

Information or reconnoitering patrols should as a rule endeavor to avoid fighting and keep themselves concealed as far as practicable from observation.

Security or covering patrols will fight whenever necessary to their mission of guarding the main body from observation.

Information and reconnoitering patrols may fight under the following conditions: (a) To gain important information. (b) To escape with important information. (c) To avoid capture. (d) In exceptional cases to prevent the enemy gaining important information. (e) In exceptional cases to prevent the enemy from escaping with important information. (f) To prevent hos-

tile patrols from getting in rear and thus endangering the transmission of important messages. (g) In exceptional cases to capture prisoners if this can be done without great danger and there is a probability that important information may be gained from them. (h) But finally remember, it is the business of a reconnoitering patrol to gain information and not to fight.

Travel by main roads or side roads where you can observe main roads.

Keep your eyes open and see that your retreat is not cut off.

Don't forget to use flank guards where necessary, even if each flank guard consists of only one man.

Be careful about interviewing inhabitants of hostile country. It will often be necessary, but they will probably inform the enemy of your movements.

Smoking and fires may betray your location to hostile patrols.

The following notes on the establishment of outposts and performance of patrolling duty along the Rio Grande, prepared by an officer, as the result of his experience, will be of interest to all those who may be engaged on this duty:

1. Posts established along the Rio Grande have a double mission; one is to protect the various pumping plants on which depend the water supply for the towns and camps in the interior, and to hold other important

points; the other is, to protect the country against raids, by making it impossible for bandits to wander about either by day or by night, north of the Rio Grande.

2. The first object is accomplished by constructing suitable defensive works, to enable a small force to hold the pumping plants against any attack with certainty and without undue risk to the officers or men, and by perfecting plans for conducting a defense without confusion or loss of control.

3. The second object is accomplished by active patrolling both by day and by night. The day patrolling is best performed by the cavalry, and experienced cavalry patrols are located at Donna Pump, Progreso and Rabb's Ranch for this work.

The Bandit Situation

4. While the bandits have their main haunts south of the Rio Grande, there is a large Mexican population north of the river. Many of these act as spies for, or are actively in league with, the bandits south of the river, so that it may be considered that they are bandit gangs on both sides of the river. These gangs are not military bands, as a rule, but individuals who come together for a set purpose and afterward disband and scatter, leaving no trace. The river, at low water, is easily fordable in many places, and at high water there are numerous boats available on the Mexican side. These bandits are not bold, but very cautious; if the United States troops are alert, and conduct active and systematic patrolling, they lie low and do not venture out; on the contrary, if posts are inactive and stick close to their camps, the bandits are quick to find it out, and they then wander forth, steal cattle and terrorize and rob the people. It is also possible, of course, that larger organized gangs, reported from time to time farther south of the Rio Grande, might venture north and attempt to cross the river, but this is unlikely, and in any case, the best protection against the local bandits, viz., active patrolling, is the best protection against any

others, since once their presence was discovered, however large a band they might have, they would beat a hasty retreat knowing full well the large numbers of troops in the vicinity and the ease with which the cavalry and infantry in motor trucks could move to surround them.

The Carranzista Soldiery

5. The Mexican bank of the river is occupied by detachments of cavalry, stationed at various points, their headquarters being at Matamoros, Rio Bravo, Reynosa, Camargo, and Mier. These detachments patrol the Mexican bank with varying frequency and are on excellent terms with our men, with whom they usually exchange salutes by waving their hats in passing on the opposite banks. No hostile shot has been fired across the river in this sector for nearly a year. It is highly desirable to preserve this *entente cordiale* with the Carranzistas and equally desirable not to invite or permit them to cross. Positive instructions exist that no United States officer or soldier shall cross the river to the Mexican side except under orders or on a hot trail in pursuit of bandits. . . .

Patrolling

7. Since much of the patrolling is done at night, special consideration should be given to the training for this work. Patrols consist of two or more men and may be conveniently classified as regular and special patrols. The regular patrols (of two men) being used for local reconnaissance, within a few hundred yards of the camp, and special patrols, usually consisting of not less than five men, and always under an officer or N. C. O., being sent on some special mission. At night the members of the regular patrol (of two men) should walk ten to twenty yards apart—as far as they can conveniently see one another; they should not stay out longer than ten or fifteen minutes without reporting

back to a sentinel or to the corporal of the guard, who should always keep himself informed in what direction they have gone and from what direction they will return. In this way a single active patrol will make it impossible for an enemy to approach within night firing range without being discovered. Should the regular patrol hear or see anything unusual beyond its ordinary patrolling distance from the camp, a stronger special patrol should at once be sent out to investigate it. The regular patrol should not follow a "set" beat or path.

Patrols should seldom return by the same route. The routes, distances, and time of sending, and the number of patrols sent out should be varied from night to night, taking into consideration the information received, phase of the moon and other circumstances. The patrols at first should be sent out by day that the men may become thoroughly familiar with the country and trails. The size of the patrol should be increased (or else two or more patrols sent to act in concert) if it is to go beyond two miles.

It is advisable to have designated each night one or two reserve patrols, to be sent out in case some need should arise while the special patrols are out, either to go to the support of a special patrol, if firing is heard, or to investigate some suspicious circumstance beyond the patrolling scope of the regular patrol.

The special patrols should not be kept out usually more than two and a half hours (unless they are to lie in wait somewhere), nor the same patrol be sent out more than twice the same night. Nor should patrols ordinarily be sent in more than two directions at one time, i. e., if three are sent, two at least should be sent by the same or adjacent trails. All patrols should be informed in advance of all other patrols out or to be sent out.

The men need to be taught great caution in firing. While pieces should be carried loaded at night, the leader should see that they are kept locked, and that no shot is fired unless it is absolutely certain that a legitimate target is offered or that a positive danger

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exists, making it necessary to give the alarm. Random firing alarms the command and makes for carelessness. If men are seen at night it should be determined with absolute certainty that they are not our men before resorting to firing. If an infantry patrol meets a cavalry patrol at night it should never run or hide from it, but halt and challenge.

Instruction in Patrolling

8. For successful night patrolling men need to be taught to move silently, to listen frequently and attentively, and to be practiced in interpreting night sounds and sights. *Silence* demands first of all lifting up and quietly planting the feet in walking to avoid stumbling over stones and rough ground; second, absence of any noise or rattling of equipment such as a loose canteen chain or the rasping of bayonet scabbard against breeches; third, absence of talking, coughing, whistling, etc. Tapping on the stock of the rifle will be found a satisfactory means of communication between members of a patrol.

Sounds travel far at night. An inexperienced man will often think a shot fired a mile or so away is fired within a hundred yards. It is difficult to judge of the distance of sounds, and also of the direction. The men should study the interpretation of night sounds. The normal night sounds vary with the character of the country and with density of the population. One familiar with these can always tell whether anyone is approaching. An ordinary baseball megaphone is useful to listen through on night outpost as it intensifies sounds to the ear about 100 per cent.

Night sight is most important and must be cultivated. To begin with, no man should read, play cards or sit by a lamp or lantern in the evening before going out on a night patrol, since to do so blinds him from seeing out of doors at night. Use of electric candles (while permissible *on the return trip* of a patrol) should in general be avoided. Practice in picking up distant objects

at night and then testing the accuracy of sight by going up to examine the objects will soon develop good night eyesight. The men should all learn to orient themselves at night by the stars, not only by the Dipper and North Star, but by other stars and constellations, the position of the moon, and of the planets. They should also learn to avoid, when possible, marching toward the moon in open moonlight in night patrolling, and to avoid halting on the sky line or against a light background. Men sometimes seek cover under a tree at night; the background against which they may show up is usually more important than the overhead shadow. In moonlight all men should be inspected to see that no part of the equipment or dress is shiny or shows white; pieces should be carried low and without bayonets. On dark, cloudy nights the men should be practiced in orientation by the recognition of fences, trails and objects which they may have been able to observe by day, and by the direction of the prevailing winds.

Night morale is important. Men unaccustomed to moving in the dark at first are fearful at every unusual sound; as they get used to it they learn that night is the safest and most favorable time for patrolling, and that the best man by day is twice the best man at night. In case a patrol meets anyone it should almost never resort to firing. Most men want to fire at night to keep their courage up, because they are frightened. If undiscovered the patrol should generally halt, wait and listen, until it can act with as full knowledge of the case as possible. Its action should consist of either a charge or a silent get-away; against an inferior enemy in any numbers a charge will generally win, against a greatly superior force rapid fire of a single clip may precede the charge. In a reconnoiter the surprise favors the side of the aggressor. To insure cohesion and united action, the patrol should march as closed up as practicable at night; the exception is crossing an open space in the moonlight which should be done by twos.

Training: Patrolling is not to be taught the men from books, but by practice combined with friendly and

intelligent criticism. The officers should frequently lead many patrols, especially at first, and the next day or before the next patrol point out the errors and suggest how the work can be better done and how the men can fit themselves for the better doing of it. . . .

Drills While on Outpost

10. As the night duty imposed on the men on this service is arduous, day instruction and duty should be reduced accordingly. A short, snappy drill might be held occasionally after retreat, but once or twice a week drills should be held after dark to accustom the men to move by command and to deploy at night. Night deployment should always be with normal intervals (one man per yard) and with fixed bayonets, and the men taught to charge or rapid fire and charge, for offensive action. . . .

Guard and Patrol Details

12. The men should preferably not be put on guard or patrol duty oftener than every other night. In no case should they be put on oftener than three nights out of four and, if that be found necessary, the regular guard and patrol duty should be alternated with special patrol work and all day duty suspended that is not absolutely necessary.

13. *War diaries* will be kept by each post and submitted to the division or separate brigade headquarters which established the post every ten days, giving a record of all patrols (with the leader, route, strength, time of starting and return and information gained by each) of the guard, drills, alarms and any unusual military event. . . .

You can estimate the strength of a column from the following:

Troops passing a point in one minute: Infantry in 4's, 175; infantry in 2's, 88. Cavalry in 4's, 110 (walk),

200 (trot); cavalry in 2's, 55 (walk), 100 (trot). Guns or caissons, 5.

Messages

You should have a field-message book. Write your messages in the following form:

No. 1. U. S. Army Field Message,
From Patrol No. 1, Co. "L," 23d Inf.
At LAMARQUE, 23 Nov. 14, 8:15 a. m.

To C. O. Co. "L," 23d Inf.,
NADEAU.

Have observed LAMARQUE—GALVESTON road from top of water tower. A hostile patrol of about eight mounted men is now at north end of CAUSEWAY. They are moving in this direction on the GALVESTON—LAMARQUE shell road. Will remain in observation.

PETRUS, *Sgt.*

Note about above form of message.[1]—When there is considerable chance that messengers may be intercepted by the enemy, it will be safer to omit not only your own location but also the location of the commander to whom the message is addressed. In this case before allowing the messengers to depart, make them repeat aloud: (1) The location of the commander for whom the message is intended; (2) the location of your patrol.

General notes.—When messages are sent back through hostile territory, send two men with written messages, either together or by separate routes. You must be the judge of this. Make them repeat the message before departing. Tell each messenger the route he is to take and the rate of speed at which he is to travel. Caution the messenger to destroy the message

[1] It is an excellent plan to enter numbers 1, 2, 3, etc., on the maps of the commander of the patrol and of the officer directing the reconnaissance. These may be used instead of names, and may be changed from time to time.

rather than allow it to fall into the hands of the enemy. Messengers who have been sent back from a patrol do not as a rule rejoin in the patrol; consequently, you have no means of knowing whether your message has been delivered; therefore (1) number your messages No. 1, No. 2, etc., in order that your commander may know whether a message has failed to reach him; (2) if you send more than one message, repeat in message No. 2, etc., any very important information that you gave in message No. 1, thereby making it doubly sure that your commander will not miss any important information in case previous messengers were captured.

Additional Notes on Observation

A thick cloud of dust indicates infantry. A high thin cloud indicates cavalry. A broken cloud indicates artillery or trains.

Note: Be careful about estimating by dust clouds, because: (1) The wind may cause dust clouds to act deceptively; (2) these deceptive dust clouds may not be caused by troops at all, but civilians, vehicles, etc. Therefore it is better to get close enough to be absolutely certain of what you see.

Preliminary Instructions—Cavalry Patrols

Assuming considerable instruction in the abstract has been imparted to officers and noncommissioned officers, the country surrounding the camp should be thoroughly covered by reconnoitering patrols and sent out with definite instructions to go by certain routes, to return by others, to be at certain places at set times, to observe all local features, ranches and their names, the habits and customs of the people and their communities, names, how spelled and how pronounced, watering places, kinds of forage and where to be obtained. Encourage the cultivation of friendly relations with inhabitants of all classes.

After several weeks' training by day, repeat the patrolling at night over the same country, cultivate the

sense of direction and of traveling by night signs and sounds, testing for quick and quiet marching. Whenever possible, obtain the company of experienced natives with an intimate knowledge of signs and trailing. Test the officers and the noncommissioned officers on how to travel by the map. See that all patrols report departure and return and that officers always inspect patrols at these times.

Reconnoitering Patrols

At the preliminary inspection see that your patrol commander sets his watch with your own, and that he is provided with a map, compass, notebook, and pencil; and that each trooper has his rations, canteen filled and grain for his mount. See that the horses have been watered; that the men are fit for the field; and that they are properly clothed, armed and equipped. See that the rifles and pistols are loaded and locked; that the bridles and bits are properly adjusted; and that the horses are shod and equipped with halters and halter shanks, and the saddle properly packed for quiet and quick movement. Troop commanders should always make sure that no detachment leaves without its commander reporting its departure to the organization commander or to one of the lieutenants. Upon return of the patrol similar report to be made, whereupon either he or one of the lieutenants should make an inspection of the detachment and of its mounts. The instructions for the patrol should be simple and definite, where to go and how, gait and time of return. Have them repeated by the detachment commander and make sure that he thoroughly understands them. Tell him where other detachments and patrols are or may be expected. Keep other detachments and patrols informed of the movements of your patrols. Inform your patrol commander of how and where he may reach you in an emergency, of places en route where there are telephones. Direct him to notice telephone and telegraph lines and to report as quickly as possible if any are cut,

to observe and report any wire fence which has been cut. This is, in itself, in bandit times, an evidence of illegal crossing and of probable bandit trails.

When practicable and consistent with instructions from higher authority direct the patrol commander to return by a different route from that which he followed going out. Impress upon him the value of aggressive action in his mounted mobility, and that this must not be sacrificed, except under most exceptional circumstances. Impress upon him his mission. Show your interest in his mission and in the conduct of his patrol, and do not give the impression that it is a routine performance.

Conduct and marching of a reconnoitering patrol: A reconnoitering patrol should not be less than a squad consisting of a noncommissioned officer and seven troopers, and the general principles of advance and rear guard shall apply. Two troopers should be out as a point, at varied distances, extended or close, according to circumstances. Where possible, however, in all movements in a close country, keep at least two troopers together. When marching in column of half squads or twos, the troopers march on either side of the road close to the brush or fence. Arrange for simple signaling when they separate. On the march, water your horses at every opportunity.

Bivouac

Avoid any routine bivouac. If there is any danger in the vicinity, change the bivouac to a new place after nightfall. Sleep in uniform; avoid sleeping in wooden houses or other buildings, making good night targets and offering no compensating advantage of protection from fire. Post double sentinels in hiding or in shadow, with open or moonlit spaces around them, watching roads and possible approaches.

Routine sentry duty is particularly dangerous.

Before turning in, the detachment commander should decide in his own mind what he would do in a case

of sudden attack, and give his detachment instructions accordingly.

Cover for the horses should be considered and provision made for their security both against thieves and stampede. Consider quickest use of telephone or other communication with commander.

Nothing is more interesting to the soldier than patrol duty and nothing develops more rapidly his initiative and confidence. The selection for this duty may be made a means of arousing competition among the men in the matter of keeping their equipment and clothing in perfect condition. An officer in the Philippines used to select his patrols by inspection of the footgear. As soon as this became known, practically every man secured a pair of strong, perfectly fitting shoes.

Map Reading and Sketching

Every intelligent soldier must learn to read a map, and if he aspires to be a noncom. and eventually an officer he must become absolutely at home on the map, be able to travel on it and find himself, and later on to make simple road sketches and position sketches, whether he has a natural talent for drawing or not. So much the better if he can make a pleasing picture, but every man of intelligence can draw some lines and learn the conventional signs, so that he can make plain to his comrades or to his officers what he has seen by accurate observation.

In patrolling and scouting, noncoms. and picked soldiers are sent out to gather information. No matter how keen the powers of observation, the soldier must learn to make some conventional picture of it to show to his commander or his patrol leader. Power of language is not enough. With the most accurate use of English it would take a steady flow of words to describe what a patrol leader or scout has seen; whereas with a few lines in the sand or on a sheet of paper, properly oriented, he can convey his information and impressions. By constant practice on the map every soldier can soon find himself at any given moment, and add very much to his own interest and his value to the service.

In every orderly room there are a number of simple manuals on the subject issued by the government. The private soldier, when out on patrol or scout, can soon learn from his noncom. not only how to read a map, but how to make one. Some of these simple manuals are, "Military Map Reading, Field, Outpost and Road Sketching," by Beach; "Military Maps Explained," by Eames; "Military Sketching, Etc.," by Grieves. All may be obtained from the Book Department, Army Service Schools, at Fort Leavenworth.

The following system for initiating training in map sketching is suggested. An interested

noncommissioned officer can accomplish much in this way.

1. Select a loop several miles from camp and return. Pick out half a dozen of the keenest soldiers and send them around the loop in opposite directions, three each way. Direct them to start at a certain time and return at a certain time. Direct them to observe everything and everybody en route; that they may meet other soldiers, but must see the others without being seen themselves; that you intend to ask them to describe the route and everything and everybody seen en route. Direct them to estimate the distance traveled and the ranges to every prominent feature on the route.

2. Give a trailing problem. Ask questions about signs and trails.

3. Send your individual soldiers to different hills and on their return ask questions about what they have seen.

4. Send them to various places in the vicinity at night. Direct them to elude each other if met on the road. Send them across country to different points. Ask them questions about the points of the compass, the prevailing winds by day and night, the general trend of the country and of the streams, and general direction of the main roads.

5. *Noncoms.:* What they provide themselves with before going on patrol. Mark different

points and routes on the map for them to use in traveling to the points indicated both by day and night.

6. *Test in map reading for noncoms.:* Indicate the steepest slope on a road between two points. Could a patrol at a certain point see a man in the road near another point? Point out on the map an orchard; hedged fence; barbed-wire fence; telegraph line; cultivated land; improved road; embankment; cut; house; barn; double-track railway; village; steepest slope on the map; highest hill.

How long would it take you to march from A to B? Orient your map. How far is it from camp B via the ——— road? via road A-B? via road C-D? What is the scale of your map? Show me the bridges across River X? Fords? What are the distances to hills 1, 2 and 3 from camp? What is the lowest point on the map? What is the camp's height above sea level? above River X?

7. *Test in map making for noncoms.:* (1) Start in at camp, make a road sketch along road A-B to X. (2) Our battalion is on outpost: General line A-C-D; reserve, two companies, at F; line of resistance the bridge, 1, 2, 3. Support No. 1, one company, near 17; support No. 2, one company, near 21. (a) Draw an outpost sketch of support No. 1. (b) Draw an outpost sketch of support No. 2.

8. *Test in writing messages:* In command of a reconnoitering patrol returning to camp. Sergeant So-and-so, having been out on a night patrol, returning to camp at daybreak. On arriving at the house of Juan Garcia, about one mile south of A, he informs you that at 4 a. m. he was visited by a party of raiders who forced him to come out of his house under threat of opening fire on him; asked him some questions about the whereabouts of soldiers and carried off his Winchester and a pony. You at once take up the trail and send a written message by courier to your captain. Write the message.

You are commanding a flank patrol sent out from the support of the advance guard of a force marching from A on B via D road. When you reach 7 you see a mounted patrol of the enemy moving north at a trot. This is the first time you have seen the enemy. Write the proper message to your commander.

You have arrived at Cuevas crossing on the Rio Grande at daybreak and see a trail from the water's edge. On arriving at Madera a native saloonkeeper tells you that a party of raiders looted Ojo de Agua last night, terrorized the natives and left about midnight. Write a message to send to your commander at Camp Mission. You have in your possession progressive military map of the district.

VIII

Camp Expedients

SOLDIERS campaigning in the winter or in cold climates are apt to be well provided to meet the bitter conditions both in clothing and shelter, but the careless preparation and life comes to the soldier in hot summers or southern climates when the contrasts in temperature between day and night are great and lack of foresight or improper preparation has been made. Cold and damp or wet nights following hot days, or nights in a high altitude following clear, hot days, endanger the health and comfort. The easiest provision is one suit of light woolen underclothing for night wear on duty or for sleeping. The government provides woolen socks and the flannel shirt. If the soldier keeps stowed away the extra suit of light flannel underclothing it may be a life saver.

Always endeavor to make yourself comfortable for the night. If two hours' preparation will enable you to have six hours' sound sleep it is much better to make the effort than to lie down for eight hours in restless tossing. Therefore always try to gather brush or grass to put under your bed. If this is not possible take an intrench-

ing tool and loosen up the surface of the ground, removing rocks, and leaving a hollow for the hip. The bedding carried on the march is adequate for sleeping on the ground, whereas it would be inadequate if a cot were provided. If the ground be damp the poncho should be underneath. If there be indications of rain, the ground should be ditched. In a strong wind the blanket alone has very little warmth. If the blanket can be covered, however, to shed the wind, the soldier will be much warmer.

Soldiers are fire worshipers in a way. Whether in camp with your comrades or off in detachment or lost in a strange country, as all soldiers are on occasion, fire is his best friend—to cook by, for company and comfort, and to dream by. Seldom is the soldier caught without matches, but very often he finds himself wet to the skin, and matches likewise. So to be on the safe and comfortable side, keep your loose matches or box wrapped in a piece of oiled silk, which can be gotten from any druggist for a few cents, or use a water-tight rubber match box which can be had from the dealers in sporting goods. If you are young enough to have been a Boy Scout, you will have learned to make fire by friction, or by striking sparks with flint and steel, or with your knife and a flinty stone, using as tinder the scrapings of your handkerchief or a piece of cloth, or by using your watch crystal

or some other piece of glass as a burning glass. Another wrinkle of old soldiers is using the powder from a cartridge and the percussion cap. But best of all, make sure of your matches.

It is no disgrace to be lost, but it is to stay lost. Find yourself first. Sit down and cool off. If in daylight make sure of your direction by the sun, or the prevailing wind, or the general lay of the land. Follow your back trail, or a stream course. If in a friendly country and in a hurry or hungry, fire your piece three times. If at night, and starshine, your old friend the Dipper will give you the North Star, or the moon or a planet will help you get the general direction. If still bewildered, light a fire, make yourself comfortable for the night, and find yourself in the morning.

Fortunately a soldier does not often have to cook for himself. He has a proper feeling of dependence on his troop or company cook, who knows how to handle the ration and cook it satisfactorily for the hungry hundred. But every soldier in the field carries in his field kit two reserve rations, which are there for a purpose: for the emergency in the presence of the enemy, or if separated on patrol or other detached service.

If you have been a Boy Scout, or thrown with regular soldiers, or lived much in the open and watched an Indian, you know that one of the

first principles of individual cooking is to do it over a small fire, instead of a large one, or better yet, a few red coals. In other words, cook your food instead of yourself. You will usually be hungry enough to enjoy your own cooking. Most regular soldiers like very weak coffee, but lots of it and sweet. That is easy to make and you have the tin cup to do it. Put in coffee to your taste, remembering that you may have to make it last two days. Let it boil up about three times and dash in a bit of cold water to settle it. I have seen Cubans make delicious coffee by pulverizing it between stones, and pouring boiling water through a sock holding the powder. This indicates that you should get ground coffee for your pack if possible.

Tea is a most heart-warming and wholesome drink in the field; it weighs little and is altogether easy to handle and carry about.

But your bacon is going to be your mainstay, and since you eat a good deal of it, learn to cook it right, and not have a greasy mess. Cut slices about five to the inch, three of which ought to be enough for an emergency meal. Place in your mess pan with about one-half inch of cold water. Let come to a boil and then pour the water off. Fry over a brisk fire, turning the bacon and browning it. Remove the bacon to lid of mess pan, leaving the grease for frying anything you may have been lucky enough to

pick up. Variety is as difficult to secure on active service as it is important in view of the depressing effect of an unappetizing and monotonous diet. Quick assimilation is more easily attainable when fresh meat is issued and is best obtained by the use of stew. The valuable influence upon digestion of the "appetite juice" which follows soup, broth, or beef tea should not be lost sight of. A mincing machine is a very important item in the equipment of camp kitchens. The company or troop kitchen is a favorite place for soldiers to hang out, especially on cold or wet days, and most soldiers will have enough tours of kitchen police to be thoroughly at home about the kitchen; so keep your eyes open, keep on the usual good terms with the cook, and learn something about soldier cooking before you are thrown on your own resources.

Part II—The Commissioned Officer

I

The Newly Commissioned Officer

Oath of Office

One to accompany the acceptance of every commissioned officer appointed or commissioned by the President in the army of the United States.

I, A—— B——, having been appointed a Captain of Infantry in the military service of the United States, do solemnly swear (or affirm) that I will support and defend the Constitution of the United States against all enemies, foreign and domestic; that I will bear true faith and allegiance to the same; that I take this obligation freely, without any mental reservation or purpose of evasion; and that I will well and faithfully discharge the duties of the office upon which I am about to enter: So help me God.

A. B.

Sworn to and subscribed before me, at————, this————day of————, 191 .

C. D.,
Judge Advocate G. C. M.

This is the simple form of dedication of every officer from the First in War down to John Doe commissioned from the ranks by the President as commander in chief of the army of the United States. Having held up his hand, from that moment he belongs to Uncle Sam for better or worse, and although remaining subject to the laws of the land, his life and conduct also fall under the Articles of War and code of military laws and customs made statutory by Congress.

The Articles of War which have come down from Gustavus Adolphus through England, and which have governed the army for more than one hundred years, have recently been modified and amended by a new code passed in 1916 and which became effective on March 1st, 1917. Like the Prince of Wales, his proud motto is "I serve," and like him, his powers and privileges are carefully regulated and subordinate to civil power, but by the same token he becomes a leader of men, and like the Roman centurion he can say: "To one man Go, and he goeth; to another man Come, and he cometh." He joins a band of comrades who live and play together with the same spirit as they fight together. As Lord Roberts put it, he is one of those happy individuals who love to call themselves poor soldiers. He already has the proud traditions of such men as Washington, Hamilton, Marshall, Scott, Jackson, the Lees, Grant, Sherman, Sheridan, Upton,

Custer, Lawton, Chaffee, Miles and Funston; men who, having come from the volunteers, West Point and the ranks and joined the sworn brotherhood of arms, found themselves on the same social and official footing without regard to former life or condition. To get and keep the leadership of his men requires a lifetime of work and training. The winning of a commission implies superior education, training or opportunity. The new officer, if not already excelling, must set about attaining superiority at once, and must become expert in the use of all his arms. He must shoot better with rifle and pistol, handle his saber better, ride and march better than any man of his command. This superior skill requires constant work and training. He must become a constant student of his varied profession, realizing that the rôle of the officer to-day is to be that of a glorified schoolmaster, and his command a constant mill through which passes the crude man power of the nation, each man retiring into the reserve fit to go back in the time of war and at his country's call.

One of the first duties and not the least important of the happy warrior is looking his part, setting an example in life and appearance to his men, who naturally and instinctively follow his lead.

One of the first thoughts of the new officer is about uniform and equipment. He should sup-

ply himself with the best of everything, but I strongly advise his getting only a service uniform and that he defer completing his kit until after joining his command. Like a sportsman going into the North woods and turned loose in Abercrombie & Fitch's, he is apt to overload himself with many useless things. If he has the opportunity, it would be well for him to visit the leading outfitters, leave his measurements with such as Abercrombie & Fitch, New York, the army cooperative stores in the great cities, such as in New York, Washington or San Francisco—H. V. Allien & Co., New York, Wm. H. Horstmann Co., Philadelphia—and good uniform tailors, such as Brook Bros., New York; John G. Haas, Lancaster & Washington, etc., etc. E. Vogel, 64 Nassau Street, New York, or Teitzel, Junction City, Kas., whose boots may also be obtained through the army cooperative stores. (See Appendix I for Individual Field Equipment for Dismounted Company Officers, and Appendix II for Equipment, Army Officers' Reserve Corps.) Side and personal arms may be obtained from the Ordnance Department and Officers' Field Rolls may be obtained from the Quartermaster Department. For further advice on like matters address the adjutant of your regiment if you have already been assigned to a command, otherwise to the adjutant general of a military department who is the nearest to a bureau of informa-

tion for the army, and who will be glad to reply to questions concerning the service.

All official publications, drill regulations and other manuals of the service may be obtained by writing to the Superintendent of Documents, Washington, D. C., who will furnish a list of all army publications.

Professional books not published by the government may best be obtained from the Book Department, Army Service Schools, Fort Leavenworth, Kas., who will also furnish list on application.

Upon being assigned to a command, the officer will at once address a formal letter reporting to the commanding officer, quoting the order from the War Department, requesting instructions.

Forms of military correspondence are peculiar, certain models of which are given in Appendix III, based on the General Order 23, 1912, War Department, which covers all forms of such correspondence in full.

You will receive an extract of an order from the War Department directing you to report to your proper command or commanding officer. You will feel for the moment like a boy who is going off to school with the uncertainty of his reception and the possibility of going through a preliminary kind of hazing for ignorance or freshness. But if you are of the right sort and becomingly quiet and modest, you will find a

real warmth of reception awaiting you from your comrades in arms. Everyone from the colonel down will treat you with a distinguished courtesy and with an evident desire to make you feel at home. The adjutant of the command will be glad to answer every question and put you in touch with the little wrinkles and life of the service.

Very quickly you will realize that the life and work is largely and properly an instinctive following of the customs of the service as in all other armies. In other words, the customs of the service are certain immemorial conventions which reduce friction of all kinds and classes of men living together on terms of personal equality and rights regulated by an official hierarchy. Remember that these conventions are just as closely observed by the soldiers as by the officers, and are just as necessary for their comfort and happiness and convenience as for those of their official superiors. The ignorant or inexperienced civilian often rails at them and always misunderstands them. They are what makes the happy ship of the navy and the contented company of the army.

The little courtesies of intercourse are important where men are so closely bound together, and the officers and general must observe those toward enlisted men with most decided particularity of conduct. The captain and fellow lieu-

tenants will quickly put the new officer on to them. His relations with the officers will follow easily, but the new officer must be impressed with his relations with the enlisted men of his own company. He must show a respect in his intercourse with the noncoms., especially the first sergeant and the soldiers, and it will soon become a feeling one on both sides. He should at once obtain a list of the organization and memorize the names of his men and put them to the men as quickly as possible. He should interest himself in the history of the organization and the life histories of the noncoms. and soldiers, acquiring this with the utmost discretion. The American soldier does not like the French familiarity nor the English patronizing ways, and intercourse should be in keeping with the customs of the service. The popularity seeker, or freely familiar officer, soon acquires the disdain or contempt of his men. If he is going to lead them in hard times and have their willing and instinctive respect in following, he must exercise a quiet patience and an insistence on their rights and privileges, and a keen interest in their comfort and welfare. The intimate service in the field will give him every opportunity for showing this. It must not be forced.

Self-control is the most important faculty of command over Americans—an even tone of voice and a quiet, cool way. When you speak

to a man, use his name, never the old-fashioned terms of "you man" or "my man" or any other patronizing expression or tone of voice. Show a lively interest in everything that is going on in the way of both work and sport, and cultivate the utmost discrimination in giving rewards and punishments.

Study the temperament and characteristics of your men, and remember that punishment itself is not an end but a means for better work and particular reform. Be sympathetic but not soft-hearted at the wrong moment. Remember that enlisted men in barracks are not "plaster-of-paris saints," but have all of the little faults and at the same time the fine loyalty and often splendid qualities of the young American. Most of your soldiers are not much more than boys, and they should be handled as such.

Your heart will warm particularly to the non-coms. They have been tried by fire and are usually a splendid lot and stand by you through thick and thin, and it is one of the finest experiences of the service to go through hard times with them.

The duties of a subaltern are seldom sharply defined. He is a leader in a very varied life and the finest life on earth, if he takes to it—full of adventure, sport and travel, with periods of great stress and strain. Remember that by law an officer is set down as an officer and gentle-

man and with that high privilege there goes *noblesse oblige*.

You must watch your company commander and profit by his example. If he is an experienced commander of troops you will note the following:

1. First, last and all the time he shows a keen interest in his men as individuals. The old man is the quick philosopher and friend of his troopers as well as the captain, instructor, disciplinarian and judge.

2. His men feel at liberty to come to him at any time with any question, personal or official.

3. He sees to it, however, that the appeal and approach is always made in a soldierly way, proper military courtesies observed, uniform neat, etc. Most regular soldiers get permission from the first sergeant or noncom. in charge before visiting the captain.

4. In giving routine orders he does it through the first sergeant, keeping his lieutenants informed. He issues as few orders as possible. He keeps from nagging, but sees that every order is promptly and intelligently obeyed. If the captain receives an order, he is responsible for its execution and must see it through.

5. He is loyal in his obedience to the orders he receives from his superiors, and in carrying the orders out he sees that each of his subordinates thoroughly understands his share of the

work and does it well. He does not permit an order given to one subordinate to be transmitted by that subordinate to another and thereby absolve himself from responsibility. The subordinate may have to transmit the order to many others but the captain holds responsible the one to whom it was originally given.

6. He never reprimands nor punishes unnecessarily, and when he does he is quiet and calm about it. If he loses his temper and is unjust to a man he does not consider it beneath him to ask pardon of the soldier.

7. He is unrelentingly severe upon the soldier who is insubordinate or willfully neglectful, but stands ready at any time to give even the worst man another chance if the proper spirit be shown. He never permits a soldier to feel that he has offended so deeply as to make it impossible for him to ever regain the good will of the old man.

8. When called upon to furnish a soldier for special detail, he endeavors to select the soldier best qualified regardless of the fact that the duty may separate such soldier from the organization. This he knows will enhance the reputation of the company, troop, or battery and will probably result in favorable details and rapid promotion coming to the men under his command.

9. Finally, in disciplining his soldiers he always impresses upon them that they should work with him for the good of the service as a whole and

the reputation of the organization itself. In other words, he establishes an *esprit de corps.*

The younger officer should not hesitate to consult the older noncommissioned officers of the company. The first sergeant will think none the less of him if he spends some leisure hours in the company office working on the company records and correspondence and consulting the company clerk about the routine paper work. The company supply sergeant will respect him the more highly if he confess that he does not know the names of the different parts of the equipment and asks the older soldier to lay out a complete equipment, show him the parts, and how to fit them. The mechanic or artificer will feel proud if the young lieutenant asks him to instruct him in the method of taking apart the magazine rifle and reassembling it. All these soldiers know that the officer is the better educated and that in larger matters he can instruct them. A desire to know thoroughly their part of the work also will gain not only their respect but their cordial good will, and no officer makes any progress who has not both the respect and the good will of the enlisted man.

As quickly as practicable a young officer should familiarize himself with the field equipment of his organization and all the articles which must be carried in campaign both on the person and in the wagons. Appendixes IV and V are guides

to the present requirements. They are, of course, subject to change.

Above all, do not drink or gamble. Both take time, and time is what the modern officer has the least of. Probably no harm results from an officer taking a drink after the day's work is done, but it is difficult to tell when your work is done, and even a single drink lessens one's efficiency. Drinking to excess or to the extent of making it impracticable for you to do your full share will certainly win you the distrust of your commanding officer, the resentment of those who have to do the work you neglect, and the contempt of the soldiers (though these last may be forced to conceal their true feelings).

This book is for the citizen soldier, combined from experiences in the oldest of professions, so that he may help himself to train and train others. Soldiering in America has been a side issue and a little profession, and so neglected by the very men who will now show interest and bring a new and varied intelligence to the service.

Many will take to it with a will and enjoy it, others as an irksome duty, like unto jury duty or paying taxes. Such enjoy handling ideas rather than men, and would rather stay sheltered than resolutely venture forth into the blizzard of life. All in time of war have the oldest instinct of going forth to fight, but wilt with disgust under the work and routine necessary to learn

to fight effectively. Many a National Guardsman during the past summer on the border has sworn at the trying training and camp drudgery. "I enlisted to fight," but he will look back on that six months of getting ready as the outstanding lesson of a lifetime.

I confess I'm taking to the game. . . . I was too highbrowed about this war business. I dream now of getting a commission.—*"Mr. Britling Sees It Through"* —Wells.

Hugh's letters divided themselves pretty fairly between two main topics; the first was the interest of the art of war, the second the reaction against warfare.

After one has got over the emotion of it, and when one's mind has just accepted and forgotten (as it does) the horror and waste of it all, then I begin to perceive that war is absolutely the best game in the world. That is the real strength of war, I submit. Not as you put it in that early pamphlet of yours, ambition, cruelty, and all those things. Those things give an excuse for war. they rush timid and base people into war, but the essential matter is the hold of the thing itself upon an active imagination. It's such a big game. Instead of being fenced into a field and tied down to one set of tools as you are in almost every other game you have all the world to play with, and you may use whatever you can use. You can use every scrap of imagination and invention that is in you. And it's wonderful. . . . But the real soldiers aren't cruel. And war isn't cruel in its essence. Only in its consequences.

Fortunately the art of war is not an exact science, it is life itself in its most varied phases

and raised to the *n*th power. Everyone will find his place, and by proper organization will be put in it. But everyone too should go through the soldier training for his body and soul's sake before the national tryout.

Every boy picks up, in playing baseball, football and other games, short, sharp words of effective slang which save an extensive flow of language. Every team in whatever game develops a system of signals which insure quick and distinctive response to the captain. In all our games the prime importance of teamwork is impressed upon us from boyhood, and the necessity of reacting to every sound and signal, and the teamwork which stands for victory has traditions and years of work behind it, either in college or among the professionals.

Why does not the average American understand the much greater game of training an army —forcing hundreds of thousands of men to react to the will and word of the commander in chief? The history of our wars is one of disputes over orders and disasters due largely to a lack of understanding of the expressed intention of the commanders. In other words, the American volunteers did not speak the same language. In the regular army, from close association and from standardized education and training, there is mutual understanding and instinctive teamwork. The higher command issues an order in

simple and clear language, and it goes filtering down the military hierarchy, and the will of the commander is quickly and quietly carried out. Ask any staff officer who has served a general commanding green troops what happened when he signed an order directing general movement or particular action, and you will find that nearly every colonel to whom the order went called up headquarters to ask questions about it—to find out what it really meant.

Take the order for the attack of the Confederate general before Shiloh, and you will find his adjutant general put forth a document so full of maxims of war and attempts to coordinate a loose-jointed force that nobody had time or patience to find out what it meant, and in consequence no movement occurred on time, no attack was pulled off as directed, and the general lost complete control of his force from the start. Throughout the Civil War generals were obliged to explain so carefully and direct so much in detail that proper discretion was not given, and changed conditions left the distinct commands in disorder and lacking leadership. Military parlance is just as strange to the uninitiated as the language of the lawyer or the doctor, and it is only by the close association in the service with both officers and men that it can be acquired. Careful reading of the list of professional books given below will give a familiarity with the

more formal language of the profession, and the courses of study in the garrison and in the service schools, and working out problems on the map will be of great help.

As in every profession, the would-be officer of regulars, of the National Guard or volunteers, or the self-sacrificing citizen, should read up not only on his particular "pidgin," but for the interest and liberal education some general list of standard works. These books should be read for interest and instructive habit of mind only. When in the camp or field, don't hark back and try to fit the actual conditions to others' experiences or to abstract theory.

Then as said the Squire to Doctor Syntax:

> No sir, let your books rest themselves,
> In known content shoulder to shoulder on
> their shelves.

COURSE OF READING FOR MILITARY MEN

Professional Books:

Clausewitz on War.

The Bible of German Militarism.

(Deepest and most profound analysis and description of war that has ever appeared in any language.)

Jomini—Campaigns of Napoleon.

(Jomini, like Clausewitz, attempted to explain and interpret the genius and campaigns of Napoleon. Instead of producing a philos-

ophy of war, he reduced it to a system of maxims and principles.)

Hallecks Art of War.

Mercur's Art of War.

(American attempts to follow Jomini's lead.)

Operations of War, by Hamley.

(Following Jomini's lead and going him one better.)

Influence of Sea Power on History, by Mahan.

Von der Goltz:

Nation in Arms;

Conduct in War.

Mahan's Permanent Fortifications.

Annals of a Fortress, by Violet-le-Duc.

Upton's Military Policy.

The Military Unpreparedness of the United States, Huidekoper.

Valor of Ignorance, Lea.

Technique of Modern Tactics, by Bond and McDonough.

De Brack's Cavalry—Outpost Duties.

Tactics—Infantry, Balck.

Studies in Troop, Leading War Game, etc., by Verdy de Vernois.

Seventy Problems of Infantry Tactics, by Morrisson.

Leavenworth—Tactical Studies by Fiske, Conger and Bjornstadt.

Training of the Mounted Riflemen, by General James Parker.

National Service Library

Tactical Principles and Problems, by Hanna.
Fundamentals of Military Service, by Andrews.
Officers' and Noncommissioned Officers' and Privates' Manual, by Moss.
Encyclopædia Britannica: Sketches on different arms of the service, particularly under caption Infantry.
Exercises for Systematic Scout Instruction, by Capt. H. T. McKenney.
Field Equipment Manual for Individuals and Organizations, by Conley.
(By communicating with the secretary of the Service Schools at Fort Leavenworth, professional notes of most valuable kind and character will be supplied from the service schools at nominal cost.)

The following reviews are recommended:

"Infantry Journal,"
"Cavalry Journal,"
"Journal of United States Service Institution,"
"Military Historian and Economist."

Books on Military History and of general interest:

The Bible. (The Old Testament is full of military interest, and its chronicles taken together, give a remarkable picture of minor campaigns under ancient conditions, including the excellent studies of leadership and

examples of all ruses and stratagems of war.)

Wars of the Jews, by Josephus.

Thucydides.

Herodotus.

Iliad and Odyssey, Homer.

Anabasis and Horse Training, by Xenophon.

Plutarch's Lives.

Cæsar's Gaelic Wars.

Great Captain Series, by Dodge: Alexander, Hannibal, Cæsar, Gustavus Adolphus, Napoleon.

Napoleon: Jomini; Bourrienne; Ropes (particularly the Waterloo campaign); Account of Waterloo in Victor Hugo's "Les Miserables"; Bourgaud; Abbott; Sloan; Sargeant's Campaigns of '96 and Marengo.

Peninsular Wars, by Napier.

History of the Thirty Years' War, by Gindely.

Mississippi Valley in the Civil War, by John Fiske.

Lives of: John Sobieski; Turenne; Garibaldi, by Trevelyn; Garibaldi and the Thousand; Cavour and his Times, by Thayer; Marlborough, Peterborough, Macaulay's Essays; Condé; Prince Eugene; Cesare Borgia and the Italian Condottieri, Sabatini; Genghis Khan; Mohamet, Muir; Charles XII., Voltaire; Cromwell, by Morley and by Roose-

velt; Clive, Nicholson, Lawrence, Builders of Great Britain Series; Jackson, Parton; Winfield Scott; Taylor; Daendals; Raffles, Jacobs, Builders of Great Britain Series; Rajah Brooke, Spenser St. John; Crimean War, Kinglake.

Memoirs of: Baber the Great; Grant; Sherman; Sheridan; McClellan; Schofield; Nelson A. Miles; Fremont; J. H. Wilson; Roberts's Forty-one Years in India; Wolseley's Story of a Soldier's Life; Sir Evelyn Wood; Sir Harry Smith's Autobiography; Marbot; A Soldier of the Empire, Coiquet; Bolívàr, San Martin, Dawson's History South American Republics; A Confederate, by Alexander; Lee, by J. N. Page, R. E. Lee, Jr., Long, etc.; Jackson, by Henderson; J. B. Stewart, by McClelland; Forrest, by Wyeth; American Campaigns by Steele.

The following books by Parkman:

Conspiracy of Pontiac.

La Salle, and the Discovery of the Great West.

The Old Régime in Canada.

Montcalm and Wolfe.

The Oregon Trail.

Military Papers on Colonial Wars, Huidekoper.

Siege of Havana, 1762, Diaries published by Dr. E. E. Hale and paper in "Cavalry

Journal," 1903, by Lieut. McCoy, Tenth Cavalry.

American Revolution:

Fiske.

Trevelyn.

Lossing.

F. V. Greene.

Arnold's Expedition to Quebec, Codman.

Mexican War:

Ripley.

Willcox.

Donaphan's Expedition, Hughes.

Life on the Rio Grande, Thorpe.

Expeditions of Cabeza de Vaca, Expeditions of Coronado, Great Explorers Series.

Winning of the West, and War of 1812, by Roosevelt (Naval).

Winning of the Far West, McElroy.

Fur Traders and Trappers, Chittenden.

Bonneville's Expedition, Washington Irving.

Civil War:

Battles and Leaders, Century.

Histories, Comte de Paris.

Ropes.

Humphrey.

Palfrey.

Dana's Recollections of the Civil War.

Reminiscences, Horace Porter.

Letters of Meade (Mexican War).

Chancellorsville, Bigelow.

The Wilderness, Schaaf.
Gettysburg, Haskell.
Indian Wars on the Western Frontier.
On the Border with Crook, Bourke.
German General Staff Accounts of:
The Franco-Prussian Wars.
The Boer War in South Africa.
The Russo-Japanese War.
A Staff Officer's Scrap Book, Ian Hamilton.
The Russian Army in the Japanese War, by Kouropatkin.
Spanish War:
Lodge.
Santiago, Sargent.
Cuba and Philippines, Funston.
Mexico:
Conquest of New Spain, Bernal Diaz del Castilo (Hakluyt Edition).
Conquest of Mexico, Prescott.
Relations between United States and Mexico, by Rives.
Hernando Cortez (Great Leaders Series).
Memoirs of the French Intervention, Niox, '61-'67, by Blanchot.
Terry's Guide Book.
Letters from Mexico, Caulderon de la Barca.
Monograph of General Staff: Mexico
South American Republics, Dawson.
Russo-Turkish War, Greene.
With Kitchener to Khartoum, Stevens.

The River War, Churchill.
Facts and Fallacies American History, by Leonard Wood.
Franco-German War, Von Moltke.
The Great War:
Bernhardi: Germany and the Next War.
Foundations of the Nineteenth Century, Chamberlain.
Ordeal by Battle, Oliver.
Elements of the Great War, Belloc.
The First Hundred Thousand, Ian Hay (Beith).
Kitchener's Mob, Hall.
The Dutch Republic, Motley.
Rise and Fall of the Eastern Empire, by Gibbons.
Fall of Constantinople, Pears.
History of the Mongols, Curtin.
Mikado's Empire, Griffis.
History of China, Boulger.
Letters of Chinese Gordon.
American Adventurers in the Taiping Rebellion, Ward, etc.
War and Peace, Tolstoy.
Pan Michael, Sienkiewicz.
The Deluge, Sienkiewicz.
Fire and Sword, etc., Sienkiewicz.
The White Company, Conan Doyle.
Novels of Scott.
Novels of Cooper.

National Service Library

Old Panama, Anderson.
History of the Buccaneers of America, Exquemelin.
Don Quixote.
Kipling.
Chanson de Roland.
History of Bayard (from French of Larchey).
Froissart's Chronicles.
Shakespeare (particularly Henry IV and V, Richard III, Othello, Macbeth).
Creasy's Fifteen Decisive Battles.
Marco Polo, Yule.
The Spirit of the Sword, and other Addresses, by Mr. Justice Holmes.

After entering the service, all of the above books can be obtained from War College Library. Most of the early books, such as Herodotus, Homer, Plutarch, etc., are in Everyman's Edition.

II

Routine Duties of Officers

Administration (Maintenance and Government)

In approaching the matter of army administration the new officer should remember that he cannot expect to know it all at once, but he can make up his mind to do his intelligent best in every matter which comes to him. The so-called army red tape is nothing but a system by means of which the interests of the government and of the individual are both carefully conserved. You will hear many absurdities of its operation—you will be told how a volunteer officer was retained in the service two months at a total cost to the government of approximately $500 in an effort to make him account for a small item of property worth about one dollar. You will be told how through administrative stupidity equipment needed by soldiers at X was shipped to them from Y, while similar equipment on hand at X was being shipped to troops at Y. Such incidents stick in the memory while the stupendous amount of money and supplies which are handled

annually so smoothly that no one notices is forgotten.

Remember that all large businesses have their systems, and if you are going to be one cog of the wheel, make up your mind to conform until by long experience you are certain you have found some method promising improvement.

The commanding officer of the company is responsible for the instruction, tactical efficiency, and preparedness for war service of his company; for its appearance and discipline; for the care and preservation of its equipment; and for the proper performance of duties connected with its subsistence, pay, clothing, accounts, reports, and returns. In the absence of its captain, the command of the company devolves upon the subaltern next in rank who is serving with him. Captains will require their lieutenants to assist in the performance of all company duties, including the keeping of records and the preparation of the necessary reports and returns.

The health, happiness, and efficiency of an organization in the army are directly dependent upon the thorough observance of the regulations of the army and the intelligent interest of the company officers showing responsible administration.

All administrative work in the army is standardized; and all records, returns, etc., must be made out on the blanks furnished by the adjutant

general of the army. The captain is responsible for keeping a complete list of these on hand, each one of which has instructions for its proper use printed on it. For full list of these blanks, note Appendix V.

The morning report is a continuing record of the command, and is made out by the First Sergeant and presented to the captain for his information, check and signature, prior to being turned in to the sergeant major.

The sick report should be handed in with the morning report, those men on the sick report reporting at the same time to the captain for his inquiry and interest. If this is neglected by a careless officer, many soldiers will take the opportunity of going on the sick report for the purpose of dead-beating drill or fatigue.

The duty roster also is kept by the First Sergeant, but should be supervised carefully by the company commander to see that it is kept properly and that there are no unjust discriminations. The captain will thus keep himself informed of the routine duties of his men and that his men are not doing guard or fatigue duty out of their proper proportion.

All the routine records, such as the above, with correspondence books, soldiers' deposit books, company delinquency books, descriptive lists and individual clothing slips should be laid out on the captain's desk after Saturday morning inspec-

tion to see that they are made out properly and up to date.

Noncommissioned officers will be carefully selected and instructed, and always supported by company commanders in the proper performance of their duties. They will not be detailed for any duty nor permitted to engage in any occupation inconsistent with their rank and position. Officers will be cautious in reproving them in the presence or hearing of private soldiers.

Company noncommissioned officers are appointed by regimental commanders, or temporarily appointed by battalion commanders, on the recommendation of their company commanders; but in no case will any company organization have an excess of noncommissioned officers above that allowed by law.

To test that capacity of privates for the duties of noncommissioned officers, company commanders may appoint lance corporals, who will be obeyed and respected as corporals, but no company shall have more than one lance corporal at a time, unless there are noncommissioned officers absent by authority, during which absences there may be one for each absence.

The captain will select the first sergeant, supply sergeant, mess sergeant and stable sergeant from the sergeants of his company, and may return them to the grade of sergeant without reference to higher authority.

A noncommissioned officer may be reduced to the ranks by sentence of a court-martial, or, on the recommendation of the company commander, by the order of the commander having final authority to appoint such noncommissioned officer, but a noncommissioned officer will not be reduced because of absence on account of sickness or injury contracted in the line of duty. If reduced to the ranks by sentence of court-martial at a post not the headquarters of his regiment, the company commander will forward a transcript of the order to the regimental commander. The transfer of a noncommissioned officer from one organization to another carries with it reduction to the ranks unless otherwise specified in the order by authority competent to issue a new warrant.

Chief mechanics, cooks, farriers, horseshoers, mechanics, artificers, saddlers, wagoners, musicians, trumpeters and first-class privates are enlisted as privates, and after joining their companies are appointed by their respective company commanders. For inefficiency or misconduct they are subject to reduction by the same authority.

The following named books of record, reports, and papers will be kept in each company: A correspondence book, a sick report, a morning report, and in companies supplied with public animals, a file of descriptive cards of public ani-

mals, also a company council book, a record of individual property responsibility of enlisted men, and a record of punishments awarded by the company commander, to be furnished by the quartermaster corps.

There will be kept also a complete record, description, and accounts of all men who belong to or have belonged to the company. A record of vaccinations will be kept on these blanks.

There will be kept also a document file, orders and instructions received from higher authority, and retained copies of the various rolls, reports, and returns required by regulations and orders.

There will be kept also in each company retained copies of all returns of property pertaining to the company and full information respecting all quartermaster and other supplies held on memorandum receipt, showing list of articles, date of receipt, from whom received, and the name of the officer who signed the memorandum receipt therefor; also an account of all articles turned in, expended, stolen, lost, or destroyed; and the company commander will have a settlement with the staff officers concerned quarterly and when relinquishing his command.

All quartermaster property is held on memorandum receipt from the post or other supply officer. The supply sergeant is charged by the captain with its care, and the captain or one of

his troop officers should make a quarterly inventory to insure proper care and responsibility.

Ordnance property is accounted for semiannually on the unit equipment return. The method obtained in caring and accounting for this equipment is laid down in the Unit Accountability Manual furnished by the Ordnance Department. The supply sergeant sees that each man has his individual equipment and keeps a charge slip against each one. Such equipment should be checked up at Saturday inspection, or at least once every month.

There is also signal and engineer property that is accounted for semiannually on blanks furnished for the purpose. In a company there are comparatively few articles of these departments.

A complete list of individual equipment is shown in Appendix IV.

There is never any particular trouble in the regular service in easily keeping straight the careful responsibility as outlined above, as either officers or noncommissioned officers or both are experienced and thoroughly trained, but with volunteer and militia troops, many of whom have had different systems, and even not appreciating the thorough responsibility and accountability required of them, there is always much to be impressed and learned. Government property is often considered by them as common property and they have not had the experience of lock-

ing horns with the eternally vigilant Auditing Bureau of the government.

Up to the time of Pitt in England there was no honest responsibility in the British army. There was no standard method of administration or of accountability, and even the officers of the British army were liable to extreme official carelessness and what is nowadays called "graft." The paymaster general of the forces of the British army was the great bonanza of the British Government and by the perverted system political favorites were rewarded by the full control of the pay of the army and the purchase of supplies. These methods were in part inherited by the American army and were a frequent source of scandal during our Revolution. Washington and Hamilton made earnest efforts, even in the earliest days of our army, to correct these abuses, and when Hamilton became Secretary of the Treasury he established the principles of accountability and audit which have persisted until this day. Whether you believe in such red tape or not, it is here to stay in one form or other. So make the best of it.

To give a striking instance of the determined and automatic vigilance of our system, General Fitzhugh Lee on his return to the United States service in 1898, after forty years, had his pay stopped by the auditor to refund to the government certain charges made against him when he

was a lieutenant of dragoons before the Civil War. The items listed against him had completely passed from his memory and were due to some very active, and no doubt proper work, of an enterprising young quartermaster, but were done without the necessary red tape or proper authority.

The following report indicates the effect of carelessness in paper work:

"Recent complaint was made to the officer in charge, Militia Affairs, that sometimes pay rolls were returned to Company Commanders for corrections so evidently necessary and so simple that they could have been made by the Paying Quartermaster and expedited the payment of the troops. The Quartermaster was questioned as to this matter and replied in effect as follows: 'To alter a document in the slightest degree over the signature of another is technical forgery and unjustifiable under any circumstances.' Most of the corrections referred to were so evident that the officers signing the papers should have had them made before submitting pay rolls or final statements. Most of the errors, at least 80 per cent, for which papers are returned for corrections are made because officers have not *followed directions* printed on backs of blanks. The Paying Quartermaster has offered to instruct officers or their clerks in proper methods of making these papers but very few have availed them-

selves of the offer. He has also passed and paid on every voucher however irregularly made, that gave the facts necessary to ascertain amounts due. Though he considers ample time and opportunity has been given all company, troop, battery and detachment commanders to learn to submit proper documents, upon which payment is to be made, and that in future he will expect from state organizations the same compliance in form and substance as is required of regular organizations. The attention of all officers responsible for the rendering of pay rolls or final statements is called to the foregoing statement. Officers are responsible that their men receive their just dues while in the service and when about to be separated from it, and any failure to secure such justice through carelessness or neglect is most culpable on the part of an officer. For the sake of the men dependent upon him, as has been repeatedly emphasized, every officer should *read his orders, read instructions on all documents, carry them out.*"

The officer who signs a pay roll as being correct (generally the troop, battery, or company commander) is responsible that it is correct, and in case an overpayment is made and cannot be collected from the man overpaid it is a just claim against the officer signing the pay roll, and under army regulations will be stopped against his pay.

Post exchange and company councils of admin-

istration are assembled to audit the exchange company funds respectively, to ascertain and examine sources from which they have accrued and to recommend expenditures therefrom. The post exchange officer and company commanders are respectively the custodians of the exchange and company funds.

The post exchange and company councils will meet at the end of each month and when necessary. . . . The company council will consist of all officers on duty with the company.

The company commander will keep an account of the company fund and also a complete list of property with cost thereof purchased from said fund. The company fund account will be inspected by the post, regimental, battalion or squadron commander at least once each quarter.

A company council book may be obtained from the quartermaster and a record should be kept as laid down therein. The company commander should keep this council record himself, but it is good policy to leave the book in the orderly room subject to the inspection of the noncommissioned officers and men. As far as possible company funds should be kept in the bank and the company commander make payments wherever possible by check.

Company commanders will make a complete inspection of their organizations under arms every Saturday. They will also make a daily

inspection of the men's quarters and kitchens, giving particular attention to cleanliness and the proper preparation of food.

He will cause the enlisted men of the company to be numbered and divided into squads, each under the charge of a noncommissioned officer who should be held responsible for the soldierly conduct of his squad. As far as practicable the men of each squad will be quartered together.

In quarters the name of each soldier will be attached to his bunk, arms will be kept in racks, and accouterments will be hung up by the belts.

Strict attention will be paid by the company commanders to the cleanliness of the men and to the police of the barracks or tents. The men will be required to bathe frequently. In garrison, and whenever practicable in the field, they will be required to wash their hands thoroughly after going to the latrines and before each meal, in order to prevent the transmission of typhoid fever and other diseases by germs taken into the mouth with food from unclean hands. The hair will be kept short and the beard neatly trimmed. Soiled clothing will be kept in the barrack bag.

A thorough police of barracks will precede the Saturday inspection. The chiefs of squads will see that bunks and bedding are overhauled, floors, tables and benches scoured, arms and accouterments and clothing in the best order, and

that such as have passes leave the post in proper dress.

Clothing, equipments, and shoes will be fitted to the men under the direction of an officer.

Articles of public property issued to a company for its exclusive use will be marked, when practicable, with the number or letter of the company and number and arm of the regiment. Such articles issued to an enlisted man (arms and clothing excepted) will be marked, when practicable, with the number of the man, letter or number of the company, and number of the regiment. Haversacks, canteens, and similar articles of equipment will be uniformly marked on the outside as follows: crossed rifles with the number of the regiment above and the letter of the company below the intersection. The design will be stenciled in black, the letters and numbers in full-faced characters. The design will be placed above the letters "U.S." on equipments, and the soldier's number in characters one inch high below the letters "U.S."

In camp or barracks the company commander will supervise the cooking and messing of his men. He will see that suitable men in sufficient numbers are fully instructed in managing and cooking the ration in the field; also that necessary utensils and implements in serviceable condition for cooking both in garrison and field are always on hand, together with the field mess furniture

for each man. By proper forethought the mess sergeant and cooks should have had a course at the Army School for Cooks. Kitchens will be placed under the immediate charge of a mess sergeant who will be held responsible for their condition and for the proper use of rations. No one will be allowed to visit or remain in the kitchen except those who go there on duty or are employed therein. The greatest care will be observed in cleaning and scouring cooking utensils.

Special regulations for soldiers' fare cannot be made to suit each locality and circumstance. Personal care and judgment on the part of company officers are relied on to prevent waste or misuse. By due economy the ration allowance will provide sufficient variety of diet.

Kitchen and tableware and mess furniture will be supplied by the Quartermaster Corps. Allowances will be announced in orders. Commanders will enforce rigid economy in regard to such property. Articles broken, lost or damaged will be charged to individuals at fault. Such proportions of company allowances of fuel, illuminating supplies, brooms, and scrubbing brushes as may be necessary for the service of a general mess will be allotted by the post commander.

The Manual for Army Cooks contains comprehensive instructions in cooking which will be observed as far as practicable. (See Appendix VI for Report of Administration.)

III

The Development of a Military Policy

In the introductory sketch of training in the United States army it was evident that there has been no national policy, and the only consistent school of war in the United States has been war itself, and with the exception of the Civil War all were minor campaigns, whose lessons were promptly forgotten, and the sacred fire of experience only kept burning by the selected few of our spirited veterans, who themselves hardly digested and interpreted what had happened.

After each war there was a Congressional Commission of investigation whose conclusions were neglected or forgotten, certainly they were not taken advantage of, and until Mr. Root became Secretary after the Spanish War there was no statesman who tried to give effect to the plain and pitiful lessons learned. There was no organization or body of officers in the army itself that did so. There was thought to be no need of it, because Americans and American statesmen believed in the face of evidence that each war would be the last.

After each war also the nation felt strong in the training and power given it by the war itself, especially after the Civil War, when in the pride of power it could dictate and enforce its policies. And it was apparently confirmed by the Spanish War that we could always handle our minor campaigns on the frontier and in the islands of the sea with one hand and it trusted in Providence and the latent power of great resources for the great wars with first-class powers which was easily hoped would never come. Mr. Root, however, with his great analytical mind and determined statesmanship, interpreted the national misadventures, and after the report of the war investigating commission at the end of the Spanish War proposed to Congress a well-thought-out plan and policy for the future. He sent abroad to the armies of the nations in arms selected commissions of our foremost generals like unto those of General Sheridan and others after the Civil War, whose reports had been buried in the files of the War Department and only resurrected during his administration, among them that most valuable and far-reaching report on the military policy of the United States by General Emery Upton.

With this report as the beacon light, and the discriminating experiences of such generals as Ludlow, Sanger, Young, Wood, Corbin, Chaffee, Bell, Bailey, Wotherspoon, Carter, McClernand,

Parker and others, who visited the army maneuvers in Europe prior to the Great War, he and his successors tried to prepare the country for the one great problem it could not handle out of hand, that of war with a first-class power. The regular army itself had to be jolted and brought to a realizing sense of its weakness and ineptitude and made to think on a great scale commensurate with the power and resources of the country in men and supplies.

Mr. Root founded the War College and fathered courses of work and studies beginning with the academic education at West Point and the continued professional education of the army through the different army schools, particularly that of the line and the staff at Fort Leavenworth.

In 1903 he persuaded Congress to a radical organization of the army, and the creation of a chief of staff as the military adviser to the President and the Secretary of War, with the assistants of the General Staff appointed at large from the army by careful and discriminating selection, to study the military needs of the country and to help prepare the country for war.

The chief of staff was made the coordinating head of the army and given great power and prestige for the purpose of coordinating and supervising the staff department work, so that the

historic failures of war time due to the lack of such would no longer occur.

Up to this time there had never been any attempt to formulate a national policy. Upton's famous report on the military policy of the United States showed clearly there never had been such a thing, and his proposals for such had been absolutely neglected.

In the years since the organization of the General Staff, national policies have been studied and prepared and proposed to Congress, such as that on the Organization of the Land Forces of the United States presented to Congress in 1912, a statesmanlike paper prepared by the General Staff and approved by the Secretary of War after conference with the general officers of the United States army. With this as a basis the General Staff has formulated policies on organization, legislation, education and training which have been in these days of the Great War the subject of general information and discussion, and have finally proposed and formulated a plan for universal service. We are learning the lessons of the Great War now, but the danger is in interpretation. He who runs may read all about it in any daily paper.

The auxiliary arms, such as artillery, flying, and other mechanical forces, have been developed to an unimagined degree. War correspondents, many attachés and observers, and the spir-

ited Americans who are fighting in all of the continental armies insist upon our learning only from their own particular experiences. Every kind of war is in progress in every part of the world and every experience should be studied and considered and discriminated for our own purposes. I am minded of the befuddled Malay Rajah in Java, disturbed by his villagers fleeing in terror from a great new beast, dependent in his ignorance on the excited tales poured into his ears. One in the darkness had felt the great beast's tusk and represented him as white in color, hard as marble and sharp as a razor; another punching his bulky side insisted he was big and bulky, soft and tough, black and hard, while the flabbergasted man who had felt his tail described him as a serpent. So in the fog of this war, with the advantage of still standing on dry land, let us try to see clearly and realize thoroughly that most of our troubles come from the scale and intensity of it.

I find from the best sources that all the great powers deadlocked or mobile and victorious are still training on the right lines of common experience, and in general may be said, after six months of intensive training of the soldier in spirit and fitness and to march and to shoot, he is sent to the front, not ready for every kind of war, but so prepared that in the particular terrain and for the particular experiences into which he

is to be pushed he is given months more of special training.

For our purpose I propose to outline the Provisional Manual of Training prepared by the General Staff and published under the authority of the Secretary of War in Official Bulletin No. 2, 1914, and to follow it with the experience in the Brownsville district where General James Parker applied the abstract principles laid down in a most practical way on the largest scale heretofore attempted in our army, and trained some thirty thousand American soldiers of the National Guard successfully under the most trying conditions of system and climate, so that in less than five months, although not ready for the strain of modern war itself, they were handled together in division maneuvers. These men gathered from States as far distant as North Dakota, and Virginia, New Hampshire and Texas, Louisiana and Nebraska, Illinois and Colorado, over 60 per cent of them having been recruits without any training, and having very different characteristics; marched without any straggling, worked hard and lived in the open without any sickness to speak of, and played the next game to war so as to give a feeling of pride to every officer present.

Synopsis and extracts from the Provisional Manual of Training, Bulletin No. 2, 1914, Volume I, No. 2, Office Chief of Staff:

Development of a Military Policy

Outline of the System

The training of troops devolves upon the officers. All training thus centers about the instruction of officers. In its entirety, such instruction presents two aspects—that received while serving with troops and that received by pursuing a special course of instruction at schools established for the purpose. Regulations governing the several established schools are published in War Department orders. The system herein laid down pertains to the training of officers serving with troops.

Training of officers serving with troops begins with entry into service and progresses through an unbroken period of three years under tutelage, followed by a period, not necessarily unbroken, of three years of personal effort under precept and guidance, with finally an indefinite period, extending through the grade of captain, of personal elective effort under supervision. It is assumed that the periods of instruction under tutelage and direct guidance will serve the double purpose of establishing a sound basic knowledge and of instilling habits of industry.

The duties which officers are called upon to perform are grouped under the three heads of Routine (Duties; Care, Management and Training of Troops; and Tactical Handling of Troops). The training of officers in the performance of these three classes of duties consists of individual instruction in the theory and practice of each and of applied training carried on simultaneously with the instruction of the troops.

Routine duties.

Study (self-directed or orderly).

Law and Regulations: Military Law; International Law; Rules of Land Warfare; Official Orders, regulations, manuals, other official publications, bearing directly or indirectly upon the officer's duties.

Military Policy and Military Art; Military Policy of the United States; Strategical, Tactical, Logistic, Technical, and Economic Studies; Modern Languages.

Practice.

Command (Organization and discipline); Drill, Honors, Courtesies, Ceremonies, Guard Duty. Appointment and Reduction of noncommissioned officers and company specialists. Interior Economy and Inspections of arms, accouterments and clothing.

Administration (Maintenance and Government): Procurement, Transportation and Issue of Supplies; Military Courts and Commissions; Punishments and Rewards.

Training of Troops.

Military Technology.

Individual training:

1. Use of weapon—Small Arms Firing Manual, fencing manuals.
2. Use of equipment—Drill Regulations, General Orders and descriptive pamphlets.
3. Development of physique and marching power —Manual of Physical Training.
4. Special technique of the arm or corps—Drill Regulations.
5. The individual specialist in the arm or corps—Topographical Sketching, Signaling, Messenger Duty, First Aid, Telephony, Agents of Communication.

Collective training:

Mobile fighting troops; Infantry, Cavalry, and Field Artillery—Drill Regulations, Manuals and Orders pertaining to each.

Special Troops; Harbor Defense, Signal, Sanitary, Engineers, General Service—Drill Regulations, Manuals and Orders pertaining to each.

Military Economics.

Personal Measures:

1. Care of Person, personal hygiene and individual cooking—Hygiene.
2. Care of Horse, knowledge of the powers and limitations of the horse and the conservation of his energies—Hippology.
3. Care of Equipment and Supplies—Care of Arms, clothing, leather, webbing, and metal equipment—Orders.

General Measures:

1. Sanitary measures applied to the command.
2. Prophylactic measures applied to the command and its material.
3. Hippology in its general application to the command.

Tactical Handling of Troops.

Leadership.

Fighting Troops: Combat operations of each arm; the three arms combined; minor operations. Protective operations; covering and exploring detachments. Field Service Regulations, Part I. Drill regulations of the arm in conjunction with those of other arms.

Special Troops: General service in connection with the operations of fighting troops. Combat service as fighting troops. Field Service Regulations. Part I. Drill regulations of the arm or corps in conjunction with those of all other arms or corps.

Direction.

Operations: Field Service Regulations, Part II.

Administration: Field Service Regulations, Part III.

Study.
Instruction from textbooks.
General character of books.
Regulations dealing with—
1. Drill of the Arm.
2. Machine Gun Drill.
3. Field Service.
4. Rules of Land Warfare.
5. Tables of Organization.

Manuals.
1. Interior Guard Duty.
2. Small Arms Firing.
3. Use of Hand Arms.
4. Military Hygiene.
5. Hippology.
6. Military Topography.
7. Ordnance Pamphlets, Arms, and Accouterments.
8. Special Manuals of the Arm or Corps.
9. Instruction orders.

Instruction in the use of reference books.
General character of books.
Regulations.
1. Drill of other Arms and Corps.
2. Army.
3. Uniform.
4. Ordnance Property.
5. Unit Accountability.
6. Standing orders (all sources).

Manuals.
1. Equitation and Horse Training.
2. Physical Training.
3. Army Horseshoer (mounted troops).
4. Special Manuals of other arms and corps.
5. Pack Transportation.
6. Unit Equipment tables.
7. Ordnance Supply.
8. Army Cooks.
9. Army Bakers.

Development of a Military Policy

CHARACTER AND SCOPE OF THE EXAMINATION AS TO PROFESSIONAL FITNESS OF OFFICERS NOT OTHERWISE DECLARED ELIGIBLE FOR PROMOTION.

For officers of Cavalry and Infantry (including Porto Rico Regiment of Infantry)

I. ROUTINE DUTIES—CHARACTER AND SCOPE OF EXAMINATION

I. Study.

(*a*) Law and Regulations.

(*b*) Military Art, History, and Policy.

Second lieutenants:

Manual of Courts-Martial. Oral.

Cavalry Drill Regulations. Cavalry only. Oral. Definitions, signals, general principles, school of the soldier, school of the trooper, school of the troop, employment of Cavalry, stable duty, troop inspection.

Infantry Drill Regulations. Infantry only. Oral. Part I, omitting pars. 263 to 289, and 327 to 341, inclusive; Part II; Part IV, company inspection only; Part V, Manuals of the bayonet, saber, tent pitching only.

Army Regulations, Courtesies, etc. Oral. Article XL (1913).

Manual of Interior-Guard Duty. Oral.

Field Service Regulations. Oral. Part I.

Use of Special Troops. Oral. Manual of Training.

Small Arms Firing Manual. Oral. Part III, Chapters I, II, III, only.

First lieutenants:

A treatise on the Military Law of the United States (Davis). Oral. Chapters XIII to XIX,

inclusive. The examination to take the form of presenting concrete cases to the officer for an application of the law.

Cavalry Drill Regulations. Cavalry only. Oral. The School of the Squadron; the Regiment.

Infantry Drill Regulations. Infantry only. Oral. Those portions not required of Second Lieutenants.

Army Regulations. Oral. Articles I to XV and XXIX and XXX (1913).

Modern Studies. Choice of one foreign language; a tactical study; or a study in world politics. Or, in lieu of any of the above any special study chosen from the list of elective Special Studies. Manual of Training, Elective Course. Oral.

Captains:

International Law. Oral. Elements of International Law (Davis), Chapters I to IV, inclusive, and IX to XIV, inclusive. Rules of Land Warfare.

Military History and Policy. Written.

1. A campaign of the officer's selection, studied previous to examination and a written study presented at time of examination. The study to cover:

(*a*) The strategy and general conduct of the campaign.

(*b*) Detailed study of the tactics employed; a deduction of basic principles, of subsidiary principles or fallacies, and a statement of the officer's judgment as to the effect of modern arms, equipment, and means of communication upon application of principles. Dates, names, and exact strength and composition of forces are not required to be memorized.

II. Practice.

(*a*) Command.

(*b*) Administration.

Second lieutenants:

Paper Work. Written. Preparation of the ordinary returns, rolls, requisitions, and other papers with which an officer must be familiar in order to perform the duties of a battalion adjutant, quartermaster, and commissary, and company commander in post and in the field. The officer will be furnished the necessary blank forms and will be permitted to consult any official source of information to which he would in practice refer in the preparation of papers.

Cavalry Drill. Practical. The officer to demonstrate his ability to maneuver a platoon or troop at war strength.

Infantry Drill. Practical. The officer to demonstrate his ability to instruct and maneuver a platoon or company at war strength.

The introduction to the manual of Training. Oral.

Field Service Regulations, Part II.

First lieutenants:

Paper Work. Written. Preparation of regimental papers. The officer will be permitted to refer to any official sources of information he may desire.

Cavalry Drill. Practical. The officer to demonstrate his ability to instruct and maneuver a troop at war strength: (*a*) Close Order; (*b*) Extended Order.

Infantry Drill. Practical. The officer to demonstrate his ability to instruct and maneuver a company at war strength: (*a*) Close Order; (*b*) Extended Order.

Military Policy of the United States (Upton). Oral. General knowledge only required. Details not required.

Field Service Regulations, Part III.

Captains:

The officer's record of administrative ability as shown by his efficiency record will be furnished the examining board who will determine whether the officer should be further examined.

Cavalry Drill. Cavalry only. Practical. The officer to demonstrate his ability to instruct and maneuver a squadron or regiment at war strength: (*a*) Close Order; (*b*) Extended Order.

Infantry Drill. Infantry only. Practical. The officer to demonstrate his ability to instruct and maneuver a battalion or regiment at war strength: (*a*) Close Order; (*b*) Extended Order.

II. TRAINING OF TROOPS—CHARACTER AND SCOPE OF EXAMINATION

I. Technology.

(*a*) Individual Technique:

1. General Service.
2. Cavalry and Infantry.

(*b*) Collective Technique.

Second lieutenants:

1. Use of Weapons. Practical. The officer to illustrate the prescribed methods of teaching individual skill with the rifle, pistol, bayonet or saber.
2. Use of Equipment. Practical. The officer to illustrate the prescribed method of fitting and using each article of the accouterment of a soldier of his arm of service.

3. Development of Physique. Practical. The officer to illustrate his knowledge of the Manual of Physical Training: (*a*) Special Training to correct defects; (*b*) General results to cover any series of five calisthenic movements, stating the object and scope of each.

4. Cavalry and Infantry Technique. Practical. (*a*) General. The officer to illustrate methods of equitation and horse training (cavalry); demonstrate some special application of principles to horse training (cavalry); to illustrate the prescribed methods of constructing intrenchments; any five knots shown on pp. 167-168, Engineer Field Manual; lashings, p. 173, EFM; Holdfasts, p. 174, EFM; camp expedients.

   (*b*) Special. Military Topography. The officer to make a sketch of the area, if practicable, over which the practical exercise in tactical handling will be held; otherwise a road or position sketch of reasonable dimensions. Signaling. The officer to send and receive a message of 10 words more or less. Resourcefulness. The officer to illustrate at least two expedients of woodcraft that would prove useful in scouting.

5. Collective Technique.

   Saber Attack en Masse. Practical. Platoon. Drill ground technique without regard to tactical considerations.

   Bayonet attack en Masse. Drill ground technique without regard to tactical considerations.

   Fire Direction and Control. Practical. The expenditure of 20 rounds of rifle ammunition per man for a platoon of 32 men is authorized. The officer to illustrate with-

out regard to tactical considerations his ability to adjust the fire of his platoon in accordance with the principles laid down in Small Arms Firing Regulations.

First lieutenants:

1. The Officer's Record. The officer's efficiency record as submitted to the board will indicate to what extent if any the officer should be examined as prescribed for second lieutenants, and is necessary to establish the officer's fitness and is discretionary with the board.
2. Field Fortifications. Practical. The board will furnish a detail of men, the necessary tools and material. The officer will superintend the construction of 1 yard of trench of a type designated by the board.
3. Packing. Practical. The officer to be provided with two uninstructed men and to instruct them in loading and lashing a pack animal.
4. Fire Direction and Control. Practical. The expenditure of 10 rounds per man for a troop of 80 men is authorized. The officer to conduct the fire of his troop upon a target or targets designated by the board to illustrate adjustment, effect and control.

Captains:

1. Fire Direction and Control. Practical. An exercise in the distribution and control of infantry fire to obtain a maximum of effect upon a given target. The board will designate the position to be occupied by the squadron or battalion and the targets. The officer will conduct a simulated fire to illustrate adjustment, control, and effect of fire. The tactical employment of infantry fire is part of the examination in tactical handling of troops which follows.

II. Economics.

(*a*) Individual Measures.

(*b*) General Measures.

Second lieutenants:

Military Hygiene. Elementary. Oral. Care of the person.

Hippology. Elementary. Care of the individual animal.

Care of arms and accouterments by the individual.

First lieutenants:

1. Military Hygiene: Oral. Sanitary Management by the company commander.
2. Hippology. Stable and Horse management by the troop commander.
3. Supplies, arms and accouterment. Handling with a view to preservation and safe keeping by the company commander.

Captains:

Hygiene. Oral. Conserving strength of men and animals on march and in bivouac.

Hippology. Oral. Forced marches.

IV

Suggestions for Tactical Training

IT has been a long time an easy and pat saying that the best school for war is war, and from our historical sketch we realize that wars have been frequent enough to keep the professional soldier trained more or less and the spirit alive even in peace-loving America. In the few years when there have been no wars at home, many of our military adventurers have hunted trouble the world over. Wherever there has been a fight you will find some fighting Americans mixing in: Paul Jones in Russia, Ward in China, Walker in Central America, Kearney, Victor Chapman, Alan Seeger, Stewart, Wood and hundreds of others in France, Shelby in Mexico, Stone in Egypt, Gardiner in India, Funston, Osgood and Janney in Cuba, and many another unsung hero wherever there was a fight for liberty or a fight for fun. These all come back and line up to train and lead the crowd of volunteers in our own wars. But since peoples have begun to think on war and the why and wherefore, and democracies have begun to make war of their own volition for vital interests, the

best minds of the nations have thought out a philosophy and with it an attendant system of physical, mental and moral training which has resulted in a thorough progressive development and training on the lines of common sense and human nature.

A Frenchman, Le Bon, gave new food for thought in his psychology of the crowd, and the practical soldiers are applying his principles with full intent, and carrying along the routine and progressive training of the soldier with the suggestion and tender touch of imagination.

The old single-minded soldier of high honor and stiff, straight lines in all his reactions is now up against the best minds and interest of the nations. He must not only train his men, but he must interest them, and show them the reason why.

Formerly the greatest attention was given to close order drills and ceremonies. In fact until the last few years training in the military schools and the National Guard was almost entirely confined to this character of drill. It was the exception when even the mechanics of extended order were thoroughly undisturbed. In recent years this was all changed. Close order drill is confined to that necessary for discipline. Extended order drill occupies the major portion of the time on the parade ground and in the armory,

but even this is only preparatory to the real training of the soldier, which is in the field.

As soon as possible the soldier is trained in field problems and exercises. Corporals are given their squads and sent on a definite mission with something to accomplish which requires them to think, decide and act. More complicated problems are given platoon leaders and company commanders and the training is extended to the higher units.

The commander of any force utilizes the period of inclement weather in instructing his subordinates in the theory of tactical problems. There is always an assumed situation in which certain information is given of the supposed position and strength of the enemy, definite information of our own forces and resources, and the orders to be carried out. This theoretical training accustoms the officers and noncommissioned officers to clear thinking and quick decision.

An infinite number of problems can be worked out on any map and the same is true of any varied terrain. Some problems are designed to teach certain specific principles, as for example—a problem in control of fire which for the sake of illustration is outlined as follows:

On terrain having approximately one thousand feet clear space there are stationed at one end a number of umpires with flags; the troops are formed at the opposite end. Under orders of

their commander they advance. As long as the umpires' flags are down the formation can be continued. When the umpires raise their flags this is an indication that the losses of the assailants are so great that the commander must change his formation. For example, if he has been advancing in squad columns without firing he must throw a portion of his men at least into skirmish line and have them open fire. When this has been done the umpires' flags may come down indicating that the superiority of fire is with the attack. The advance continues in the new formation until the flags are raised again. This necessitates another change. It means more rifles must be put into the firing line. In this way the rush by company may have to be changed to a rush by platoon and again to a rush by squad. Finally the flags come up and remain up in spite of every effort the commander of the attack may make, and every maneuver he may undertake. This means he must bring up reenforcements and the advance of these reenforcements, also, is controlled by the flags of the umpires. With the strengthening of the firing line the flags are lowered again and again the commander of the attack attempts an advance. If his dispositions are unskillful the flags go up again and again until in the opinion of the umpires he has maneuvered himself into a position to enable him to make the charge.

It may be easily seen that such a problem will teach more than months of ceremonial or following any fixed regulations for drill.

By far the major portion of the field problems, however, present a situation in which the enemy is represented by another body of troops, the soldiers bearing some distinctive mark such as a white or a red band around the headdress. Each commander is given an assumed situation and instructions which require the two bodies to meet on some suitable terrain. The opposing troops move out, protecting themselves by patrols and advance guards. These come in contact and information is sent back to the commanding officers. The situation develops until the two bodies of troops are in contact. The officer capable of maneuvering into the most favorable position is the winner of the problem. In this way the instruction is made intensely interesting both to officers and men and it is impossible to anticipate what the developments will be.

I have recently heard General Parker talking to the assembled officers of a National Guard regiment, say that after forty years of work and interest, he felt himself learning something new every day. In a recent sketch of the Russian leader the writer says:

To begin with, one should make it entirely clear that there is nothing haphazard or extemporized, no element of mere luck, in what General Brusiloff has accom-

plished; no single factor of effort or training or science has been lacking in his lifelong preparation, and no element of devotion or consecration. Heredity, too, has played its part, and early environment has had a share in the ripening of his genius.

So that no matter what the rank, every officer should be practicing himself in peace time with the means at hand. Without the strain and great school of battle, he can keep preparing himself and his men much better to-day than ever before. Most of the great armies of Europe had no training in war, but everyone of them which has shown effective fighting in the field prepared both its officers and men by the more intelligent and modern methods of progressive training, and many of the most successful officers and staff officers by what is known as the Applicatory System. It involves the map problem, terrain exercise, war game, maneuver and battle exercise.

Few officers can learn their profession on the battle field, the best of all schools, and the application method of teaching tactics was involved in an effort to reproduce in peace the situations which would confront an officer in war, situations involving most essential elements and conditions of war excepting the use of weapons.

The following extracts from Major H. B. Fiske's "Notes on the Solution of Tactical Problems" will serve as a guide to the military student.

In the field, tactical problems of greater or lesser importance are continually being solved by officers of all ranks, from the supreme command down through the intermediate grades to that of captain, and even within the company by those in charge of its patrols, its pickets, and its other detachments. Every time the captain deploys his company, except at a merely mechanical drill, every time he stations his company as an outpost or as a support thereof, every time he is assigned a task on the general duty of security, or makes any new dispositions therein, he is compelled to arrive at a tactical decision, which can be reached only by the solution of a new problem. That problem may be solved without much conscious use of reason; but in any case, however simple the process, the process nevertheless is there. And as one goes up in the hierarchy of rank, the problems presented for solution are of constantly increasing importance, if not of frequency.

Unless there has been extended training in the solution of problems, even the simplest one is liable to strike vacant the mind of the one who is suddenly confronted with the responsibility for its solution. Who has not seen the untrained officer, in the face of such a necessity, utterly unable to grasp any idea as to his proper action? And yet the solution may be tactically so simple as to be solved instantly by the trained mind and almost by intuition. Still, while the situation may be simple and the answer axiomatic to the man who knows, yet, like most military operations, upon its correct solution depend perhaps many lives. The nation that sends its men into war under officers untrained in the solution of tactical problems is carrying a tremendous responsibility; and so likewise does the officer who neglects to acquire all possible previous training.

No amount of study of the theory alone of the art will, by itself, fit one to meet the emergencies of war with skill and certainty. To acquire such, not only must its principles be learned, but the habit, as well, of their application to concrete cases must be established. A man might read volumes on how to lay brick, but he

could hardly attain skill thereat until he has long experience in the actual handling of his trowel. The military mind, like the mason's hand, requires practice in the use of its tactical tools to acquire dexterity.

We do not have to wait for war to present its vital problems in order to begin the training of our officers in applied tactics. But the teaching of tactics in time of peace by application to concrete situations requires no defense. To confound the critics of that system, one need but to point to the German army, and to the map of Europe to-day.

The following extract on the value of tactical studies, is taken from the introduction to Buddecke's Tactical Decisions:

"However high may be duties which come to an officer in the departments of education, instruction, administration and scientific investigation, he nevertheless enters upon the activity corresponding to the real character of his calling only when he exercises command of troops and when he exercises such command in the presence of the enemy. It must be the aim of every officer to become at some time a commander, to become a responsible leader in action.

"For this purpose he needs, in addition to the development of peculiar personal characteristics and in addition to experience and service with troops, before all else, a thorough tactical education.

"The tactical instruction which an officer gains in military schools and with troops is not alone sufficient. Study on his own part must be added. The tactician has need, in his profession, of steady and uninterrupted training in order both to preserve and to develop his powers once he has discovered them. The commander receives his education not only in the saddle, but also at his desk. This is proved by illustrious examples of celebrated commanders.

"Military history offers inexhaustible material to the officer who wishes to pursue his education in tactics. It leads him directly to the conditions of war and, by showing the ever-changing relations between cause and

effect, brings him to a realization of the conditions upon which success and failure depend.

"Military history, however, offers only what is finished and completed. The mental activity exercised in its study is a reproductive one and its value to the student depends directly upon the extent to which he is able to grasp and synthesize the real conditions and their relations and to enter into the thoughts of the leading personalities.

"The education of the tactician demands, in addition to this, a productive activity, in the exercise of which he is confronted by questions still unsolved, which he himself must solve. Therein lies the worth of tactical problems, which are the more valuable the nearer the conditions approach those of actual warfare and the more latitude they give for the exercise of judgment and decision. They must provide the student with the means of developing his tactical judgment and of gaining practice in the use of forms.

"The tactician needs a thorough knowledge of the fundamental principles to build on as well as the faculty of rightly applying them. Through uncultivated genius alone, which pays no attention to form, he will never become equal to the difficult problems of a serious crisis. Still less will the mere theorist be able to fill the position if his powers be limited to the knowledge of formal tactics.

"That power of decision and action which is able to cope with all the situations of war is gained only by developing the ability to form a judgment in technical matters with certainty.

"Therefore tactics is an art to be learned. Like every other art, it demands a measure of talent, and the highest stage of perfection can be reached only by those highly gifted at the start. In spite of this, however, the less gifted can, through practice, gain a considerable degree of facility, and many a tactician has only begun to find out his powers as he advanced in the knowledge of his profession. Here also, one may say: 'industry is genius.'

"It should therefore be the aim of every officer to progress through the individual study of tactics and thus prepare himself for the highest duties of his calling."

We cannot, in time of peace, simulate or present anything adequate to take the place of the tremendous strain under which, in war, all commanders reach their decisions; whether on the firing line under a decimating hostile fire, or miles to the rear in some splendidly equipped great general headquarters—a strain which confuses and deadens the ordinary mind and character, but which with those few minds of the very highest order, seems simply to clarify and stimulate their workings. Notwithstanding this war-time stimulation, the military genius has always, in peace, been a great student and critic of his predecessors; and while perhaps in many cases he has not laid himself hypothetical problems for solution, he has nevertheless persistently studied and solved the actual problems which history tells him were presented to former commanders. How very much more does the ordinary mind, which is crushed and stupefied by the appalling circumstances of war, need all the guides, landmarks, and resources of applied, and long continued peace training, along lines and through incidents which, at least, are similar to those it is then encountering.

As with the strain, so it is in other respects with much of the realism of war; it cannot be very closely simulated. Actual work on the ground with troops in maneuver furnishes us the nearest approach thereto. Next in realism, come those exercises in the form of tactical rides or terrain exercises where the actual ground is used, but the troops are imaginary. But in tactical rides and terrain exercises of all sorts, much time is lost by the necessity for moving from point to point. In actual maneuvers, time is again lost, and the labor performed by the troops is, in the aggregate, very great. Much of the work, moreover, particularly of the higher commanders in the solution of their problems, is in no wise affected by the presence or

absence of troops, or even by being in the neighborhood of the terrain where the problem is laid. In all large movements, movements in which more than a division is concerned, the problem frequently is solved at a comfortable headquarters and on the map. And many of the problems of much smaller bodies will, even in war, be solved on the map without reference to the terrain, other than as there shown. Consequently, when from the map and in peace time we state a situation and arrive at a decision upon the questions involved, the departure from the actualities of war is not so great as to detract too much from the value of the training so acquired.

Moreover, by first solving problems on the map during the portion of the year when maneuvering is difficult, proceeding then to exercises on the ground in which only officers take part, we finally arrive at the maneuver ground with the corps of officers already pretty well trained; and with the necessity only of completing their education by correcting the probable inconsistencies that have crept in through the mistakes of the imagination, and of the many unexpected difficulties developed by actual handling of human beings instead of the iron war-game soldier of the map room. In this way we obtain a maximum of training with a minimum of effort, at least so far as the private soldier is concerned; for to maneuver throughout the year, and get all of the training of our officers by field work alone is impracticable. Field work to be of value must imitate the characteristics of war, which call upon the individual for the most extraordinary physical and mental exertions. Such periods in time of peace cannot be long continued if well done, and if not well done they do more actual harm than good.

V

Special Training

"THE Great War has been terribly hard on the textbooks." About the only military china that has not been smashed are the primary functions of discipline and its drill, *drill,* DRILL. But even the disciplined soldier is not fit for fighting until he can shoot, and in an emergency the quickest way to teach men to shoot is the system of firing full charges at miniature targets, which should be proceeded by a thorough course of aiming and position drills. In the field all formations from reveille to retreat should be under arms. All setting-up exercises such as that laid down for ten minutes after reveille should be with rifles.

An English officer states: "In musketry, concentrate all your energy in taking care of your rifle and practicing rapid fire." Of course, his experience was in the trenches, where the firing was seldom over two hundred yards, and at that range effective rapid fire is the most destructive means yet devised in warfare.

Every officer should be thoroughly familiar with the firing regulations, the gist of which has been given in the chapter on Shooting Straight,

in the first part of this book. For his own interest and amusement, I strongly urge every officer to read the seventh chapter of "The First One Hundred Thousand," and for the information of those officers who have not had the advantage of a course at the School of Musketry, the methods used at the school for fire discipline, direction and control is published in Appendix X. I recommend also the use and certain tests of the self-contained range finder now issued to each company.

The Machine Gun

Although this weapon has largely been developed by American inventors, and has been used in one form or another in our armies ever since the Civil War, it has been more or less a stranger in our midst. The Gatling had been long known in the army, but very little used. It was occasionally let fly at some lively Indian without much effect, or by the militia in mob action, and it was handled most effectively at the psychological moment by Captain John H. Parker at San Juan Hill in '98, but has not been heard of since, due to the quick and effective development of a large number of automatics, notably the Colt, which was used with some effect in minor campaigns in the Moro Islands, and by the navy in the Samoan Islands, where the guns jammed and resulted in a bloody lesson. In fact all machine guns

jam under certain conditions of superheated action. It follows that we must have the best of guns and the best of training in handling them, and above all, thorough fire discipline and control, for being let loose without proper control the ammunition supply is almost sure to fail. They are omnivorous as well as carnivorous. The Great War has developed them to a degree unthought of before, particularly in the trench warfare, where they are used mostly in cross, flanking or enfilading fire, rarely in frontal fire. Every warring nation is getting as many as possible, and many kinds. Each kind has its use at the particular place and moment, the lightest ones for airplane work and mobile work, and the heavier ones for the trenches and supporting works. The officers and men are hand-picked for this class of work, where discretion and discipline are so absolutely needed. An outline of practical and theoretical instruction for machine-gun companies and duties for same is given in Appendix XI.

Bombs and Hand Grenades

The Great War has not only developed a vast number of new inventions and carried the old methods to the extreme, but has resurrected every device and improvision from museum and history. The bomb and hand grenade, which have been known from the days of the fall of the

Greek Empire and used so generally in the days of permanent fortifications, have come back with a new explosive effect only made possible by the extensive use of the highest explosives of to-day.

To quote Captain Beith once more: "In future it is to be a case of 'for every man a bomb or two,' and it is incumbent upon us, if we desire to prevent these infernal machines from exploding while yet in our custody, to attain the necessary details as to their construction and tender spots by the humiliating process of conciliating the bomb officer."

So far we have mastered the mysteries of the craft, there appear to be four types of bomb in store for us—or rather for Brother Boche. They are: (1) The hairbrush; (2) the cricket ball; (3) the policeman's truncheon; (4) the jam tin.

The hairbrush is very like the ordinary hairbrush, except that the bristles are replaced by a solid block of high explosive. The policeman's truncheon has gay streamers of tape tied to its tail, to insure that it falls to the ground nose downward. Both these bombs explode on impact, and it is unadvisable to knock them against anything—say the back of the trench—when throwing them. The cricket ball works on a time fuse. Its manipulation is simplicity itself. The removal of a certain pin releases a spring which lights an internal fuse, timed to explode the bomb in five seconds. You take the bomb in your

right hand, remove the pin, and cast the thing madly from you. The jam-tin variety appeals more particularly to the sportsman, as the element of chance enters largely into its successful use. It is timed to explode about ten seconds after the lighting of the fuse. It is therefore unwise to throw it too soon, as there will be ample time for your opponent to pick it up and throw it back. On the other hand, it is unwise to hold on too long, as the fuse is uncertain in its action, and is given to short cuts.

Such is the tactical revolution promised by the advent of the bomb and other new engines of war. As for its effect upon regimental and company organization, listen to the plaintive voice of Major Kemp:

I was once, only a few months ago, commander of a company of two hundred and fifty disciplined soldiers. I still nominally command that company, but they have developed into a heterogeneous mob of specialists. If I detail one of my subalterns to do a job of work, he reminds me that he is a bomb expert, or a professor of sandbagging, or director of the knuckle-duster section, or Lord High Thrower of Stink Pots, and has no time to play about with such a common thing as a platoon. As for the men, they simply laugh in the sergeant major's face. They are "experts," if you please, and are struck off all fatigues and company duty! It was bad enough when Ayling pinched fourteen of my best men for his filthy machine guns; now, the company has degenerated into an academy of variety artists. The only occasion upon which I ever see them all together is pay day!

To-day, out here, bombs are absolutely *dernier cri.* We talk of nothing else. We speak about rifles and bayonets as if they were so many bows and arrows. It is true that the modern Lee-Enfield and Mauser claim to be the most precise and deadly weapons of destruction ever devised. But they were intended for proper and gentlemanly warfare, with the opposing sides set out in straight lines, a convenient distance apart. In the hand-to-hand butchery which calls itself war to-day, the rifle is rapidly becoming *de mode.* For long ranges you require machine guns; for short, bombs and hand grenades. Can you empty a cottage by firing a single rifle, shot in at the door? Can you exterminate twenty Germans in a fortified back parlor by a single thrust with the bayonet? Never! But you can do both these things with a jam tin stuffed with dynamite and scrap iron.

So the bomb has come into its own, and has brought with it certain changes tactical, organic, and domestic. To take the last first, the bomb officer, hitherto a despised underling, popularly (but maliciously) reputed to have been appointed to his present post through inability to handle a platoon, has suddenly attained a position of dazzling importance. From being a mere super he has become a star. In fact, he threatens to dispute the preeminence of that other regimental parvenu, the machine-gun officer. He is now the confidant of colonels and consorts upon terms of easy familiarity with brigade majors. He holds himself coldly aloof from the rest of us, brooding over the greatness of his responsibilities, and when he speaks, it is to refer darkly to "detonators," and "primers," and "time fuses." And we, who once addressed him derisively as "anarchist," crowd round him and hang upon his lips.

Bombs and hand grenades have not been in use in our army since the Civil War, although improvised bombs made of the exaggerated clam

shells of the Philippine Islands and filled with home-made powder and nails and stones and glass and bits of china were heaved at us by various Philippine tribes and Moros. To attain accuracy and range in throwing hand grenades requires preliminary practice with dummy grenades, which are now issued to the service as well as rifle grenades for periods of training. The extensive presence of baseball pitchers and players in our service will enable us to train experts in their use rapidly. Instructions for throwing the hand grenades are laid down in Appendix XII.

Trenches

Some vivid pictures of actual war to illustrate the abstract principles and show the real rôle of the officer of to-day and to-morrow.

Most of our interest in the Great War and much of our information comes from the west front, where the armies have been immobile since the battle of the Marne.

Trench warfare has been carried on on a greater scale than ever before and with unimaginable violence. Attempts at reaching decisions and of breaking through have been by most violent assaults, prepared by most thorough and overwhelming artillery preparation assisted by every mechanical contrivance and invention—one surprise following another—but to every

surprise, no matter how successful at the given moment, has been at once improvised an answer. No matter how inspiring or ingenious the mechanical contrivances of this war, the ultimate answer is in men and the man behind the gun. But the individual man must be armed *cap-à-pie* and fully equipped. The army of men must be complete in all its parts. The army is the great functioning body and the infantry is still the backbone and larger part. All other branches are still auxiliary. Communications of the Signal Corps have become much more vital. If they are cut, there is a failure in the nerves and quick reaction failing in function. If the dictum of the hasty correspondent is taken and cavalry all dismounted, whatever army breaks through will find itself hampered in mobility. At Goritz, where the Italians had dismounted their cavalry, finding themselves in siege operations, the place was finally taken by a *coup-de-main* and the road to Trieste laid open. They were unable to take quick advantage of it through lack of cavalry. During the push on the Somme, vast mounted forces were held in leash for the break through. Flying service has become the eye of command, and everyone realizes and appreciates its vital importance. So with the engineers and sanitary units, all equally and vitally necessary. So that with weakness in any one thing which the welfare of the world has developed, whatever it

may be, and however apparently minor it may be at the particular point and time, in the stress of the great decisive conflict the smallest weakness will be revealed and the strong body crippled. So that the professional soldier, with all his pride in his particular arm of the service, must never forget that war on a great scale is the most intense strain on every part, and that to have an efficient army it must be a complete army in all its parts—head, eyes, body, arms and legs completely functioning, and a soul inspired and sensed with the highest duty and patriotism.

The scale of this Great War has at times made all of us lose our bearings. This trench warfare is a development as all other war doings. Fortified places are as old almost as the first hill from which a man defied his enemy. But the use of field intrenchments by a mobile army and on a large scale, was a development of our own Civil War. Our early colonials and frontiersmen learned to fight from cover, behind trees and piles of fence rails and over the stone walls at the "red coats."

But the final development in America still can be seen in the terrain of Grant's campaign against Richmond, and from the Wilderness where the trenches were hasty and shallow, through Spotsylvania, North Anna, Totopotomy, Bethesda Church, Cold Harbor to Petersburg, where the works assumed character and extent like unto

those of the western front in Europe, and can be followed and seen to-day and give the increasing use and importance of field works as plainly as the war pictures of to-day. The story of the campaign can be read in the furrowed earth by the professional soldier to-day just as plainly as the scientists and geologists build up their histories of the earth's surface and the life of prehistoric times.

To give a picture of the trench life, I quote from one of Hugh's letters home to Mr. Britling:

And now about those trenches—as I promised. The great thing to grasp is that they are narrow. They are a sort of negative wall. They are more like giant cracks in the ground than anything else. But perhaps I had better begin by telling how we got there. We started about one in the morning ladened up with everything you can possibly imagine on a soldier, and in addition I had a kettle—filled with water—most of the chaps had bundles of firewood, and some had extra bread. We marched out of our quarters along the road for a mile or more, and then we took the fields, and presently came to a crest and dropped into a sort of maze of zigzag trenches going up to the front trench. These trenches, you know, are much deeper than one's height; you don't see anything. It's like walking along a mud-walled passage. You just trudge along them in single file. Every now and then some one stumbles into a soakaway for rainwater or swears at a soft place, or somebody blunders into the man in front of him. This seems to go on for hours and hours. It certainly went on for an hour; so I suppose we did two or three miles of it. At one place we crossed a dip in the ground and a ditch, and the trench was built up with sandbags up to the ditch and there was a plank.

Overhead there were stars, and now and then a sort of blaze thing they send up lit up the edges of the trench and gave one a glimpse of a tree top or a factory roof far away. Then for a time it was more difficult to go on because you were blinded. Suddenly just when you were believing that this sort of trade was going on forever, we were in the support trenches behind the firing line, and found the men we were relieving ready to come back.

And the firing line itself? Just the same sort of ditch with a parapet of sandbags, but with dugouts, queer big holes helped out with sleepers from a near-by railway track, opening into it from behind. Dugouts vary a good deal. Many are rather like the cubby-house we made at the end of the orchard last summer; only the walls are thick enough to stand a high explosive shell. The best dugout in our company's bit of front was quite a dressy affair with some woodwork and a door got from the ruins of a house twenty or thirty yards behind us. It had a stove in it too, and a chimbley, and pans to keep water in. It was the best dugout for miles. This house had a well, and there was a special trench ran back to that, and all day long there was a coming and going for water. There had once been a pump over the well, but a shell had smashed that.

And now you expect me to tell of Germans and the fight and shelling and all sorts of things. I haven't seen a live German; I haven't been within two hundred yards of a shell burst, there has been no attack and I haven't got the V. C. I have made myself muddy beyond describing; I've been working all the time, but I've not fired a shot or fought a ha'porth. We were busy all the time—just at work repairing the parapet, which had to be done gingerly because of snipers, bringing our food in from the rear in big carriers, getting water, pushing our trench out from an angle slantingways forward. Getting meals, clearing up and so on takes a lot of time. We make tea in big kettles and in the big dugout, which two whole companies use

for their cooking, and carry them with a pole through the handles to our platoons. We wash up and wash and shave. Dinner preparations (and consumption) takes two or three hours. Tea too uses up time. It's like camping out and picnicking in the park. This first time (and next too) we have been mixed with some Sussex men who have been here longer and know the business. It works out that we do most of the fatigue. Afterwards we shall go up along to a pitch of our own.

But all the time you want to know about the Germans. They are a quarter of a mile away at this part, or nearly a quarter of a mile. When you snatch a peep at them it is like a low particolored stone wall—only the stones are sandbags. The Germans have them black and white, so that you cannot tell which are loopholes and which are black bags. Our people haven't been so clever—and the War Office love of uniformity has given us only white bags. No doubt it looks neater. But it makes our loopholes plain. For a time black sandbags were refused. The Germans sniped at us, but not very much. Only one of our lot was hit by a chance shot that came through the sandbag at the top of the parapet. He just had a cut in the neck which didn't prevent his walking back. They shelled the trenches half a mile to the left of us though, and it looked pretty hot. The sandbags flew about. But the men lie low, and it looks worse than it is. The weather was fine and pleasant, as General French always says. And after three days and nights of cramped existence and petty chores, one in the foremost trench and two a little way back, and then two days in support, we came back—and here we are again waiting for our second Go.

The night time is perhaps a little more nervy than the day. You get your head up and look about, and see the flat dim country with its ruined houses and its lumps of stuff that are dead bodies and its long vague lines of sandbags, and the searchlights going like white windmill arms and an occasional flare or star shell. And you have a nasty feeling of people creeping and creeping all night between the trenches.

Some of us went out to strengthen a place in the parapet that was only one sandbag thick, where a man had been hit during the day. We made it four bags thick right up to the top. All the while you were doing it, you dreaded to find yourself in the white glare of a searchlight, and you had a feeling that something would hit you suddenly from behind. I had to make up my mind not to look around, or I should have kept on looking around. Also our chaps kept shooting over us, within a foot of one's head. Just to persuade the Germans that we were not out of the trench.

Nothing happened to us. We got back all right. It was silly to have left that parapet only one bag thick. There's the truth, and all of my first time in the trenches.

To train for such conditions, the increasing importance of the right kind of discipline is evident. Force of circumstances and discriminating intelligence is changing our discipline, in military life as well as in civil life, from one of extreme coercion to a discipline of habit—a willing and instinctive obedience as an intelligent member of a great team, training for a national and well understood purpose.

The American soldier must be trained by appealing to his common sense, with an earnest effort to encourage individual intelligence and excellence. The common knowledge of the great efforts of the contending powers on the western front has borne in on everyone of us the complicated and desperate nature of every attack. We all know that superiority of fire must be prepared and maintained. Where the artillery leaves

off, the infantry and machine-gun fire and throwing of grenades and bombing must keep it up. The communications must be maintained midst terrible confusion and soul-racking noise. No commands can be heard. The attacking lines must be handled by signals which presupposes absolute training and teamwork—the thorough cooperation between all arms. For the infantry who gain and keep the superiority of fire, every individual soldier must handle his arm instinctively and rapidly and be controlled and directed by officers and noncoms. The teamwork must function in the dark, advancing and crawling by the unseen touch of training and discipline. The possibility must be attained of rushing forth from a line of shelter at a short distance from the enemy at any decisive phase of the combat. The sacrifice being resolved upon, it must be pushed through to a finish and the enemy drowned under successive waves. It is our duty as officers to train men, both physically and morally, so that the attacks will be pushed through.

In order to break through[1] completely it is necessary:

(*a*) To take the first line of hostile defense (the zone of first trenches and centers of resistance).

(*b*) To take the second line of defense.

[1] Based on an article in the "Infantry Journal" following the account of a French officer.

(*c*) To prevent the enemy from forming beyond the zone already fortified, a barrier by the aid of reenforcements brought up in haste.

There must be organized:

First: A line of attack formed in several waves of assault, with preparation for the assault by formidable artillery minutely regulated.

Second: A second line of attack as strong as the first, sent straight to the front all in one piece like the first line, with groups of light guns and machine guns, all starting as soon as the first trenches are taken.

Third: A reserve destined to reenforce any point and conquer any particular strong point.

Fourth: Cavalry, autocannon, automachine guns, battalions of infantry on motor trucks or automobiles with pioneer crews to clear the roads. Large units ready to commence new combat, capable of being brought up within two or three hours. The assaulting troops themselves cannot be depended upon to do more than break through.

The successive waves of assault are each preceded by selected soldiers and shots in skirmish formation at four to five paces interval. The fighting is very often at point-blank range and the man should be trained to use his rifle in close fighting. Teach him to watch that part of the parapet and loopholes in which he marches in order to block the shots of the enemy; to aim

rapidly, throwing the piece to the shoulder to get his shot at the enemy who is aiming at him; to have his piece always ready for close fighting; to know how to load it quickly lying down or while running.

Lieutenants in training themselves and their commands in front of any resistance whatever, best assumed by an indicated line with blank cartridges, the standard idea should be rapidly to take a position for the assault in a line of shelter at assaulting distance.

To Assault: This is only possible by a rapid gaining of superiority of fire. Develop the ability to take in the situation quickly and to act with rapidity and make a rapid reconnaissance of resistances. At varying stages of the attack call out: "Enemy resistance on such a line, our first elements are stopped at such a point"—"Hostile machine guns in such a region"—"Cavalry to the right—in rear," etc. One well-tried officer in the present war stated that in nine months of campaign, only twice did he know a company capable of delivering an assault properly.

In addition to the routine training of soldiers for individual shooting, endurance and discipline, there is needed to-day for each special problem a particular training in cohesion—actual work over the kind of ground and against the kind of trenches and obstacles he will be

pushed against. In order that a body of troops may be capable of reaching the enemy it is necessary for each man to be intimately convinced that his neighbor will march along with him and not abandon him. This cohesion of comradeship is very different from the days when the Gauls were tied together by chains to meet the onslaughts of the Romans. The chain to-day must be that of training and instinctive habit. The company should also be tried out by rough experiences in the field, so that everyone may have been able to see what his leaders and comrades are worth under trying conditions. Though habit, friendship, and confidence make no difference in the appearance of a company, in battle these qualities appear in their stanchness and value.

One French officer of experience speaks of the life in the trench as an excellent school for cohesion, but it must be alternated with a period of exercise, where there will be exercises by entire units, close-order drill and passing in review, which should always close an exercise period. All these contribute to develop the sentiment, blunted in the trenches, that the soldier belongs to a unit compact and articulate. The trench produces cohesion in a smaller group—the period of exercise, cohesion in the organization. The Frenchman insists also upon exact discipline during the period of exercise, impossible in the

trenches, requiring the punctual marks of respect and great care as to the daily aspect of the company—carefully uniformed and well disciplined. All these details have a prime moral importance. Nothing is more demoralizing for the soldier than to see around him his comrades badly dressed and negligent in their duty. He at times drops into this convenient carelessness, but at heart every soldier would lack confidence in a troop without faith or order, and he will realize it in moments of danger.

Sketch of an Assault by a Foreign Officer

The artillery preparation, roaring on the horizon like a furious storm, ceases sharply and a tragic silence falls over the field of battle. The infantry leaves its parallels in a single movement at a walk, magnificently aligned, crowned with the scintillation of thousands of bayonets. Then the hostile trenches burst out suddenly with fire, the fusillade rattles immediately, madly, dominated by the pitiless crackle of the machine guns. The wave of assailants thins out, entire units disappear, mowed down. Some lie down and advance no further, while others, better commanded, march ahead in spite of all. Some, more favored, find themselves in places where the artillery preparation has cleared the enemy out. They reach the first trench and it is hand-to-hand fighting.

The second wave arrives in its turn, avoids the zone of destruction, is absorbed in the parts where the resistance has weakened, and thus the first trench, parcelled out in partially surrounded fragments, is definitely submerged by the second wave. They re-form beyond the taken trench, they start forward again; but it is unrestrained combat by groups in the midst of shots and bullets which cross each other in every sense.

The second trench is reached, certain parts are conquered by which the flood of assailants spreads out while desperate groups resist obstinately in some redoubts.

Now in the first line of attack there is no more order, the dead cover the ground, here mowed down by ranks, there hung in the wire entanglements like grapes on the vine, or forming a crown at the summit of the parapets, or sown here and there by the scattering of the hand-to-hand fights; the wounded flow back in numbers to the rear, the isolated are straggling in all corners for the most diverse reasons; even organizations are stopped in the conquered trenches by their chiefs finding that they have done enough, and that it is high time to get out of the trouble. But beyond this immense dispersion some heroic groups, weak nuclei of multiple companies, led by ardent chiefs, make their way further into the hostile territory. They suddenly appear, urged into a gallop over the trenches; magnified ten times by the imagination of the enemy who loses his head, they run beyond into the open fields, receiving some shots here and there but surprised at the emptiness of the field of battle. Behind them the combat of extermination continues in places, but nothing follows, only some groups of isolated and wounded are returning. Then these foremost parties feel their weakness and take note of it; the emptiness, the silence, the invisible resistance impress them, they scent the ambush and soon stop.

In front of the centers of resistance the fight is hard and murderous; they have taken one or two trenches, carried the first houses, but the organizations are melted in the interminable individual fighting in the ruins; here the progress has been almost nothing in spite of enormous losses.

Thus the first line has made its effort; in the centers of resistance it has scarcely gotten a good hold on the exterior borders; in the intervals, on the contrary, it has largely expanded like a wave which had broken through a dike at one point. But it has been stopped,

out of breath, in front of the second line of defense, whose resistance is organizing, or it has been nailed to its place by flanking fire from the still unconquered centers of resistance; it is composed from now on of feeble groups of veritable fighters, just strong enough to mark out here and there the limits of the conquered ground, and of a multitude of isolated individuals and entire units which are scattered over the whole zone of attack.

This has all lasted perhaps less than an hour.

Action of the Second Line of Attack: With the enemy all in disorder, the batteries flee at a gallop before the tide which has carried away all the obstacles prepared long ago and judged impregnable; all confidence disappears; the adversary, feeling the resistance giving way around him no longer dares to hold out desperately, from now on the least thing induces him to turn tail. However, on some points reserves have come up, have manned their positions of the second line and have attempted some timid counter-offensive. Machine guns, rapidly brought up, are installed and fire with all haste to prevent access to the open zones of the defender and to gain time. The tottering resistance tries to hold on; now, one more great brutal push along the whole point like the attack of the first line, and then will come the desperate rout.

It is then that the second line appears; starting out in its turn from the parallel, it advances by immense and successive waves of thin lines, calm and unshakable among the *rafales* of shells and spent bullets.

Already numerous detachments of machine guns and light cannon have preceded it. Creeping through, following up the first line, they have been able to unravel the situation and take account of the points where the resistance seems to be desperate and needs to be immediately swept. The light cannon orient themselves directly on the rattling of the machine guns, which they endeavor to overwhelm with a shower of their small shells.

The accompanying batteries have started as soon as the first trenches are taken; they are soon oriented by the signals of the special agents of liaison—artillery men who follow the infantry. The remainder of the artillery cuts off the approaches by a barrier of asphyxiating shells and carries its fire on to the second line marked out according to the directing plan.

Thus the second line arrives close up to the advanced elements of the first line under cover of sufficient fire. The second line pushes straight to the front on the objectives fixed long before and which should claim its whole attention.

Certain of the units have a mission to block off the centers of resistance by finishing up the conquest of their exterior borders, while the great majority is absorbed in the intervals, instead of being halted and played out, playing the game of the adversary in his inextricable points of support.

To quote an expression in "A Midsummer Night's Dream," modifying it slightly, a center of resistance is a filter into which one pours battalions and regiments; it will yield only a few drops.

The organizations passing through the intervals arrive in front of the second line of defense, which is not in general occupied in a continuous manner. They run against lively and sudden resistances, or else encounter empty spaces through which they boldly penetrate, pushing straight on always to the front, without being intimidated by the silence or distracted by the resistance on the right or left. The units stopped, rapidly organize the assault and attack by main force like the first waves of the attack, without trying to maneuver, a temptation of weakness and indecision. Here again is found hesitation; units held up by only a semblance of resistance or trying to avoid it; others having approaches to assaulting distance dig in and dare not go forward openly into a supreme charge. Others are turned away from their objective to get into another combat, which absorbs them.

However, the second line of hostile defense finds itself in its turn disabled, broken in and notably passed by in certain localities, assailed vigorously on all points where a resistance is improvised in haste; it is soon parcelled out in islands and surrounded in all parts.

Action of Reserves: We are now nearly in open ground; we must still definitely clear away the last resistances which the hostile reenforcements now coming up in haste will strengthen and soon convert into an insuperable barrier if we give them a few hours' respite.

It is for this purpose that we employ the reserves.

Officers of liaison, who are not afraid to traverse the battle field to find out how things are going on, and who do not abandon the troops to their own resources until tardy reports come in, obtain the information for the superior commander, who directs his reserves to the precise points where they are most needed.

Thus are definitely broken by the reserves the last resistances which the second attacking line, occupied with marching straight ahead, was not able to encircle.

Exploitation of the Success: Finally, we have arrived in the zone of open country, the gigantic assault of five or six kilometers is ended. Now it will be the surprise, the rapidity of movements, the skill of maneuver which will gradually produce panic.

Marching and Movement of Infantry

Marching experience and discipline have been rather fully covered in the part on that subject in the first part of the book, but several additional points come to mind may be added. During the maneuvers in the Brownsville district, several Iowa battalions developed the happy habit of singing while on the march, cheering them up and preventing tediousness and fatigue, which

originate in the mind as well as in the body. Just as "A Hot Time in the Old Town To-night" quickly became the popular soldier song of the Spanish War, so the regimental tune and song of the Third Cavalry (mounted rifles) "Green Grow the Rushes O!" was sung by the army throughout the Mexican War and gave the Mexicans their popular term gringo. General Parker suggested that in each battalion a quartet or sextet of trained singers be organized to lead in singing a list of airs known to the men, such as college songs, negro melodies, and Civil War songs, as "Tramp, Tramp, Tramp, the Boys Are Marching," "Rally Round the Flag," etc., be selected. Special privileges were given to encourage the singers. The proper place for the selected band is a little in front of the center of the column in order that their voices may be heard from front to rear.

During the past summer on the border large bodies of troops were moved quickly over great distances in motor trucks. Three-ton trucks being lined up in column, whole regiments were loaded in less than a minute by the following system: Regiments to be lined up opposite the trucks and thirty men being assigned to each truck, the front rank mounted the truck from the front end and the rear rank mounted from the rear end, the rations and equipments being in the bottom of the truck, and being in some cases

used for seats. In some instances baled hay was so used and for long distances cross seats provided.

In our country such long distances are traveled by rail that it seems proper to lay down rules for the conduct of troops traveling by railroad. (Appendix XV.)

VI

A System of Intensive Training

THE following is a general outline of the practical training of General Parker's command in the Brownsville district, from July 1 to December 1, 1916.

OUTLINE OF TRAINING: PERSONNEL

General Parker in command of the Brownsville district, which extended along the Rio Grande from its mouth for some hundreds of miles, with a command of four regiments of infantry, three scattered batteries of artillery, and various auxiliary detachments of the auxiliary arms, was engaged in patrolling and protecting the border, when he was suddenly confronted with the problem of handling, supplying, and training some thirty thousand National Guard troops, hurriedly pushed into the district from States all over the Union, the highest commands arriving being brigades, together with regiments of infantry, detachments of all other arms, mostly without animals or other transportation, partly equipped and supplied. Over 60 per cent of these troops were raw recruits, most of the officers inexperi-

enced in any but the ordinary State militia functions, with many divergent systems of supply and administration, and under laws and regulations of many different States. As they arrived they were at once organized into a division and several separate brigades. General Parker at once increased his general staff and technical staff by a training staff of hand-picked regular officers, at the head of which was Major L. F. Kilbourne, Twenty-sixth Infantry, a graduate of West Point and the Service Schools of Fort Leavenworth, and recently having had the valuable experience of serving in the Fifth Brigade of Galveston under General George F. Bell. His assistants were officers of all arms of the service, including many officers of General Parker's First Cavalry Brigade, who have had the experience of his methods of inspiring and competitive training. One of these regular officers, with certain experienced noncoms. of the regulars, was assigned to each incoming National Guard regiment as inspector and instructor. A senior inspector and instructor for the purpose of supervision and coordination was assigned to the staff of each division and camp commander. The spirit of the State troops and their officers was fine. They took kindly and intelligently to the training work. The first weakness shown was in their administrative work. The average officer has no use for red tape, and does not realize that supply, health, and

comfort of his men are absolutely dependent on it. So that to the training staff were shortly added experienced officers known as inspectors of records, but who were really instructors in administration. As thousands of animals, mules, and horses were supplied the troops their lack of experience in handling these precious impedimenta were shown, and in each camp inspectors of transportation were appointed whose duty it was to train and supervise in the handling of public animals.

Although there was not much choice in the hot, alluvial delta of the Rio Grande for camps of large bodies of men, camp sites were selected with regard to the health and comfort of the commands, and railroad and water facilities supplied. Camp sanitary inspectors were appointed from regular medical corps. Camp sites were cleared of chaparral and near-by pools and low places drained and oiled. The auxiliary branches were supplied with instructors and inspectors from the regulars for their corresponding branch of the service. Cooks and horseshoers and clerks were loaned by the regulars. The regulars and National Guard were camped together where practicable, so that the regulars could serve as a model, and inexperienced National Guardsmen see with their own eyes, and also pick up the little wrinkles of the old soldiers by intimate association. Most citizen soldiers thoroughly

appreciate the value of this association and comradeship with regular officers and men, and it should be impressed upon every one of them that in the excitement and emergency of preparation that full advantage must be taken of every such opportunity.

In the Spanish War the best-known volunteer organization, the Rough Riders, owed much of its quick preparation to the fact that its commander was wise enough to entice as many old regular noncoms. and soldiers as possible, and divided them among his troops. Every man who has had the Plattsburg experience will testify to the value of the regular noncom. Indeed, one of them, a professor at Princeton, who wrote a most interesting article on his experience in the first Plattsburg camp, held that the most efficient man he had ever known in any walk of life was a sergeant of the regulars assigned to his company. Most citizens have this humility of the high intelligence and are glad to learn from those very fine men and soldiers, the noncoms. of the regular service, at the thought of whom even every regular officer feels his heart warm with pride and gratitude, for they are loyal, patient, efficient, as every regular knows, and is a fact becoming appreciated by the citizens who have had the good luck to associate with them.

I must insist that this is in no sense a manual of training. I hope General Parker or Major

Kilbourne will shortly publish such a manual based on their various successful experiences, but I simply indicate the outline of their experiences, so that the aspirant officer may realize the scope of such training, the reasons for it, and that he must make himself the leader of his men by force of character, making the most of his personality, and training himself to be superior to his men in intelligence, education, and in the handling of his command under every circumstance of peace or war. It is difficult for any man to excel one hundred men of his company in every respect. Assuming that every officer has been picked for those reasons, although he may be a subaltern for some time he must at once not only know the duties of a lieutenant, but absorb those of the company commander, and know them in outline from the start, for he will very often be by force of circumstances the acting company commander and administrator of the largest one-man command in which the chief deals intimately with the man. The very meaning of lieutenant indicates that, but with his captain present he is assistant in training and instruction and commands his unit or platoon in training and action. Although the captain as administrative head deals directly with the first sergeant and incidentally with the company clerk and mess sergeant in the affairs of interior economy, the lieutenant must sit by the first ser-

geant and troop clerk and become familiar with all their work and learn from the experienced mess sergeant the details of obtaining rations and handling and cooking them. The captain will frequently delegate all his duties to the lieutenant.

The company, the smallest administrative unit, must have all the copies of textbooks, regulation manuals, and at least three months' supplies of blanks as laid down in Appendix IV. Each blank has it clearly stated on its back how it should be made out and used. There must be for each soldier an individual record, clothing, and descriptive lists carefully made out and kept up to date. If it has not already been done, officers see that each man is vaccinated and inoculated for typhoid and parityphoid. Each officer and man must have complete his arms, uniform, and equipment. From these reports of administration and lists of blank forms and from the manuals of the Supply Department the particulars of administration will be evident. In general, rations, supplies, and equipment come from the Quartermaster's Corps, arms and munitions from the Ordnance Department. Minor supplies will be indicated by the blanks listed and supplied.

In garrison and semipermanent camps the rationing and messing are at the discretion of the company commander, limited by the monthly

allowance for rations and published each month by the Quartermaster's Corps, varying from twenty-five to thirty cents a man. The captain normally prepares a ration return for his command for one month, and he can purchase his supplies through his mess sergeant, whom he carefully supervises, anything he desires, subject to certain regulations published from time to time. Articles and supplies kept on hand in the commissary must be bought there if used at all. Articles not supplied by the commissary department, such as fresh vegetables, fruit, fish, etc., may be purchased anywhere from the company fund, which accrues from the savings made monthly on the ration allowance or from authorized income for the company fund, such as shares of the post or camp exchange, receipts from the library or billiard table, etc.

The company fund must be kept in the custody of the company commander, and must be audited each month by the company council in a manner laid down by regulations. The mess sergeant should keep a running account so that each day the captain may know how he stands and be able to arrange the rationing and messing equitably through the month.

In the field during maneuvers or war the superior commander orders issued a standard ration in kind. The company is the family of the army, and the captain has great discretion in handling

it, and in exercising his ingenuity in causing it to live well and happily. There is much human nature and common sense to be exercised, and a deep personal interest is the measure of it. It should be a happy family in the best sense. As a naval officer speaks of a happy ship, not meaning that the individuals are lightly happy, but that the organization is keenly efficient, the interior friction of the family diminished to the lowest, and the ship ready for action with a cheer.

Outline as Shown by Orders of Brownsville District

The following orders are published without much comment as the reasons are therein stated most effectively. The system is given and the reasons given, and it has been thoroughly justified by the successful condition of the command.

The keen interest of the higher command was felt throughout, soldierly and sportsmanlike competitions and conscious emulation aroused added much to develop the keen spirit of the men. Monthly tests showed up the weaknesses and the further training was based upon providing for them.

Due to the circumstances of these men coming to the border, their probable short time ahead for training, the emergency special courses B, 1908, Small Arms Firing Regulations, was used as soon

as they had had a short number of preliminary instructions on aiming and firing drills.

Those troops that remained on the border for the maneuvers of November were more effectively trained by the use of frequent combat exercises, including firing problems.

Having been somewhat critical of this system at first, I am now convinced that it is on the right lines for our training on a large scale, and I believe not only in line with our own general abstract policy as laid down by the General Staff, but after having had the opportunity of reading reports from the most critical observers in all the European armies, I believe it is consistent with the best experience abroad. Some of the minor points that I find fault with were the statement of so many minor details apparently limiting the freedom and discretion of the company commander, but in a force of so many varied kinds of troops and with so many inexperienced officers as were there present, I believe it is necessary to standardize properly and make uniform the training so that the will of the chief may be known and understood and made use of in action.

Notes on Selection of Camps

Billeting, as in certain foreign countries, is not practicable in this country, certainly not with large bodies of troops, but even for commands

not larger than regiments I believe it would be better to camp them in towns quartered in large public buildings or rented buildings, such as warehouses, etc., rather than the old American custom of always assuming that soldiers must be in camps. This is made possible by the availability of large buildings in most of our towns, and the very much better discipline and attendant conduct of our troops, especially in towns where there are no saloons, but even in towns where there are saloons nowadays the character and training of the troops causes little difficulty when under proper officers. Through the Brownsville district during the past summer, with large bodies of troops around the small towns, many of them being open towns, there has been no particular trouble, and the citizens of these towns have united in high praise of the good conduct and pleasant associations with our high-class soldiers. Where there are troops in or near a town, arrangements should be made with the civil authorities for furnishing a small number of military police, supplied with a blue and white brassard and working in close association and understanding with the civil authorities. It is very easy to select a camp site with a small command, having regard to the health and comfort of the command and the facilities for properly handling and supplying them, but in commands of a brigade or more there is often not much choice of site, and

in all camps of a semipermanent nature the drainage details and raised walks and roads should promptly be supplied. Mosquito nets should always be supplied and used. Kitchens, latrines, exchanges, mess rooms, etc., should be screened as quickly as possible, tents floored, cots requisitioned for at once and proper store tents or storehouses and room provided for. Where practicable the officer and orderly rooms should be in rooms or buildings rather than tents.

Remember that the sun is the best disinfectant, and although not so pleasant or comfortable, large and semipermanent camps should be in open and sunswept sites. All brush and undergrowth should be cleanly and quickly removed. A carefully supervised dump where everything should be burned should be provided. Crude oil will always be supplied by the supply officer for sanitary purposes. Latrines should always be dug, and carefully watched by the sanitary inspector and by company officers. Regular troops even on the march carry a screen of condemned canvas for placing around latrines. In semipermanent camps they should be the first covers and protection erected. They should either be burned out daily or sprayed with oil and lamp black. The New York division found that this was the better method, and that the latrines of the division could be sprayed and kept sanitary by this method much easier than by burning out

with crude oil. Medical officers can inform as to the details of this method.

Often with infantry commands there are large numbers of animals, and these should be supplied with shelter as soon as possible. Frame or paper roofs if possible, or if the government will not supply the lumber and materials, poles and brush can be cut, and in very hot, sunny countries, if there is not sufficient and convenient brush, grain sacks can be stretched over the poles and brush frames.

Supply officers should insist upon No. 1 forage for their animals, and see that it is not fed off the ground, but either in feed boxes or nose bags. Remember that the ordinary horse nose bags will not be large enough for mules. Daily grooming and monthly horseshoeing should be insisted upon for each and every animal, whether mule or horse. If by misadventure your requisitions are not filled for anything, responsible officers should insist on the camp supply officer supplying urgent needs, and red tape can always be cut if intelligence and tact is displayed.

Subaltern officers and supply sergeants should have temporary duty with regular supply officers, and such assistance and training will always be given on request.

The appendixes which follow all contain information of vital importance to the military man. While it cannot be claimed for the method

of presentation that it is the most interesting, nevertheless it is believed the arrangement is the best which could be made for practical purposes. This is the information which it was found by experience on the border civilian soldiers were most in need of and the great success of the training in the Brownsville district is proof of the efficacy of the system. Few officers of the regular army would be able off-hand to state where all of the data given herein can be readily obtained.

Appendix I

Individual Field Equipment for Dismounted Company Officers

Equipment "A," carried on person and wagons: Ammunition as ordered; 1 barrack bag, optional; 1 mosquito bar; 1 canvas basin; 1 bedding roll, or combination bedding-clothing roll with contents not to exceed 50 pounds, G. O. 8, W. D. 1915; 1 bed sack, optional; 1 pistol belt,[1] model 1912; 1 waist belt; 1 blanket, O. D.; 1 pair breeches; 1 hair brush; 1 canvas bucket; 1 can bacon; 1 can condiment; 1 can meat; 1 canteen; 1 canteen cover, dismounted; 1 comb; 1 compass; 1 cup; 1 dispatch case, optional; 3 pair drawers; 1 field glass; 1 first-aid packet; 1 fork; 2 handkerchiefs; 1 pair woolen gloves (if ordered); 1 haversack and pack carrier; 1 head-net (if mosquito, bar not furnished); 1 knife; 1 pocket knife; 1 extra pair shoe laces; 1 lantern, combination; 2 pistol magazines, extra; 1 message blank book; 1 mirror; 1 notebook and indelible pencils; 1 package toilet paper; 10 shelter-tent pins; 1 automatic pistol; 1 pistol

[1] This belt, with or without saber ring, includes the magazine pocket, web double.

holster; 2 shelter-tent poles; 1 pouch for first-aid packet; 1 poncho, cape or rain coat; 2 reserve rations (when ordered); 1 flannel shirt, O. D.; 1 pair marching shoes; 1 cake soap in box; 1 spoon; 5 pairs stockings; 1 sweater, optional; 1 identification tag; 1 tape for identification tag; 2 tents (shelter halves) and 2 ropes; 1 toothbrush and powder; 3 face towels; 3 undershirts; 1 watch; 1 whistle and chain.

Equipment "B," carried on wagon: 1 blanket, O. D.; 1 pair breeches; 1 cot; 1 pair drawers; 1 extra pair shoe laces; 1 locker trunk for extra clothing; 1 flannel shirt, O. D.; 1 pair marching shoes; 1 pair stockings; 1 undershirt.

Note: Clothing enumerated under "A" and "B" does not include that worn on the person.

Some of articles which may be carried with Equipment "A" up to the 50-pound allowance: 6 candles; 1 folding chair; 1 cot; extra bedding; extra clothing; 3 handkerchiefs; 1 housewife; 1 box matches; 1 mattress (light weight); 1 pillow; 1 shaving outfit; 1 pair slippers; 1 wall pocket; 1 package writing materials, envelopes, paper, stamps.

Appendix II

Uniform and Equipment of Officers' Reserve Corps

The only equipment required at present of officers in the O. R. C. are the uniforms of the corresponding grades in the regular army. In other words, a major, O. R. C., should provide himself with the uniform specified in the Army Regulations, for a major, U. S. A. If a complete equipment is desired by the appointee he can make arrangements for securing it from the Quartermaster General's Office.

Scores of inquiries are being received by the adjutant general along this line and, in reply, the applicants are referred to the revised edition "Regulations for the Uniform of the United States Army" (which can be secured from the Superintendent of Documents, Washington, D. C., at ten cents per copy); and to Changes No. 18, Uniform Regulation, War Dept., Dec. 30, 1916. We give below the paragraphs (as amended) from Changes No. 18 which relate to the Officers' Reserve Corps:

Insignia on Collar of Coat—All insignia will be of metal.

For the regular army the letters "U. S."; for the volunteer army the letters "U. S. V."; for the Officers' Reserve Corps and the Enlisted Reserve Corps the letters "U. S. R."; for the National Guard while in the service of the United States, the letters—not to exceed four—forming the abbreviation of the name of the state, territory, or District of Columbia.

(*a*) Officers—The letters "U.S." will be worn 1 inch from each end of the collar, with a suitable space between the letters, and placed midway between the upper and lower edges of the collar. The letters "U. S. V." or "U. S. R." will be similarly worn, but five-eighths of an inch from each end of collar.

If the abbreviation of the name of a State, Territory, or the District of Columbia consists of but two letters, it will be worn at 1 inch from the end of the collar; in other cases at five-eighths of an inch.

The insignia of the corps, department, or arm of service and the insignia of aids, chiefs of staff, and chaplains will be worn five-eighths inch from the letters "U. S.," and one-half inch from the letters "U. S. V.," or "U. S. R.," next to letter farthest from opening of collar.

The same rule will establish intervals from State, Territory, and District of Columbia abbreviations.

(*b*) The gold or gilt insignia will be worn on

the collar of the dress and white uniforms, and the bronze insignia on the collar of the service uniforms, except that chaplains will wear the silver Latin cross on all uniforms.

Insignia on Collar of Shirt (when the shirt is worn without the coat).—See par. 102 (*a*) as changed by C. U. R. No. 16, War D., 1916. The insignia of rank worn on the collar of the shirt will be of metal and will be worn as follows:

(*a*) *Officers.*

(1) Regular Service.

. . . . . .

Lieutenant colonel.[1]—On the right side, in the middle of the collar, the letters "U. S." and a silver oak leaf, point up; the left side, in the middle of the collar, and 1 inch from the end, the insignia of corps, department, or arm of service.

Major.—Same as lieutenant colonel (substituting "a gold oak leaf").

Captain.—Same as lieutenant colonel (substituting "two bars, one-fourth inch apart and parallel to the end of the collar").

First lieutenant.—Same as lieutenant colonel (substituting one bar parallel to the end of the collar").

Second lieutenant.—On the right side, in the

[1] Highest rank in Reserve Corps is major. See Major, Captain, and First Lieutenant.

middle of the collar, and 1 inch from the end, the letters "U. S." On the left side, in the middle of the collar, and 1 inch from the end, the insignia of corps, department, or arm of service.

General staff officers, chiefs of staff, aids, and chaplains.—The letters "U. S.," to be 1 inch from the end of the collar (substitute on the left side of the collar the proper device in place of the insignia of corps, department, or arm of service).

(2) National Guard Service.

Same as for officers of the regular service, except that the letters—not to exceed four—forming the abbreviation of the name of the State, Territory, or District of Columbia will be substituted for the letters "U. S."

(3) Volunteers or Officers' Reserve Corps.

Same as for officers of the regular service, except that the letters "U. S. V." or "U. S. R." will be substituted for the letters "U. S."

1. Based on the requirements of the uniform regulations, equipment manuals and on the requirements of the service the following is a detailed list of the minimum clothing and equipment necessary for an officer of the Army Reserve Corps to have in his possession to be ready for any service required of him.

Ordnance Equipment—For Each Dismounted Officer

New Model Equipment[1]—1 can bacon; 1 can condiment; 1 canteen; 1 canteen cover, dismounted; 1 pistol belt with magazine pocket, web double; 1 cup; 1 knife; 1 fork; 1 spoon; 1 meat can; 1 haversack (except mounted officers); 1 pack carrier (except mounted officers); 1 pouch for first-aid packet; 1 pistol holster; 1 pistol, caliber .45; 2 extra magazines.

Old Model Equipment—1 canteen with strap, 1 cup; 1 haversack (except mounted officers); 1 haversack strap (except mounted officers), or suspenders for belt; 1 meat can; 1 knife; 1 fork; 1 spoon; 1 pouch for first-aid packet; 1 pistol belt with magazine pocket, web double; 1 pistol holster; 1 pistol, caliber .45; 2 extra magazines.

Quartermaster Property—1 mosquito bar; 1 bedding roll[2]; 1 bed sack; 1 canvas bucket; 1 lantern; 1 clothing roll; 1 cot; 1 identification tag with tape; 1 shelter tent complete with poles and pins; 1 poncho or slicker; 1 whistle (company officers and battalion commanders of infantry); clothing; 2 blankets; 1 canvas basin; 1 pair leggins; 3 undershirts; 3 pairs drawers; 2 pairs

[1] Either model of equipment is permissible.

[2] The bedding roll supplied by the Quartermaster Corps or any other canvas roll may be used as a combination bedding-clothing roll.

shoe laces; 5 pairs stockings; 1 service hat; 1 hat cord; 1 woolen coat, O. D.; 1 cotton coat, O. D.; 1 woolen breeches, O. D.; 1 woolen overcoat, O. D.; 1 waist belt; 2 flannel shirts, O. D.; 1 pair russet leather shoes.

Medical—1 first-aid packet.

Miscellaneous—1 compass; 1 pair field glasses; 1 notebook and pencil; 1 watch.

Toilet Articles—1 comb; 1 housewife; 1 mirror; 1 toothbrush with paste; 1 package toilet paper; 3 towels; 1 cake soap; 1 shaving outfit.

ORDNANCE EQUIPMENT—FOR EACH MOUNTED OFFICER

In addition to above: 1 set of horse equipment, consisting of 1 cavalry bridle; 1 watering bridle (not required if model 1909 bridle is on hand); 1 currycomb; 1 nose bag (or feed and grain bag); 1 halter headstall; 1 halter strap (or halter tie rope); 1 horse brush; 1 lariat; 1 lariat strap; 1 link; 1 picket pin; 1 saddle (McClellan or Whitman); 1 pair saddle bags; 1 saddle cloth with insignia; 1 saddle blanket; 1 surcingle.

2. The unit equipment manuals for the various arms authorize organization commanders to keep on hand such of the following articles authorized by paragraph 1522, A. R. (articles of ordnance furnished by the government for use of officers serving with troops), as may be necessary to

properly equip the officers on duty with these organizations:

Pistols, caliber .45.
Extra magazine.
Pistol belts.
Pistol holsters.

3. The horse equipment required by mounted officers below the grade of major are included in the ordnance-unit accountability of the organization to which they may be assigned.

4. It is not necessary for reserve officers to purchase the horse equipment and articles mentioned in paragraph 3 above, but they may purchase such articles and use them if they so desire.

5. Officers of infantry are not required to have a saber and scabbard when on field service. Cavalry officers are required to have a saber and scabbard and are advised to purchase the new model saber which may be procured from the Ordnance Department.

6. Officers of the Reserve Corps may purchase uniforms and equipment from the supply department of the army.

Appendix III

Correspondence Model G. O. 23, 1912

Company B, 40th Infantry,
(File number) Fort William H. Seward,
Alaska, July 19, 1912.

From: The Commanding Officer, Co. B, 40th Inf.

To: The Adjutant General of the Army,

(Through military channels.)

Subject: Philippine campaign badge, Corporal John Doe.

Inclosed are lists in duplicate of enlisted men of Company B, 40th Infantry, entitled to the Philippine campaign badge.

John A. Brown,
2 Incls. Capt., 40th Inf.

(File number) 1st Ind.

Hq. Ft. William H. Seward, Alaska, July 19, 1912—To the Comdg. Gen., Dept. of the Columbia.

S. F. T.
2 Incls. Col., 40th Inf., Comdg.

(Stamp) Rec'd Dept. Columbia, July 27, 1912.

National Service Library

(File number) 2nd Ind.

Hq. Dept. Columbia, Vancouver Bks., Wash., July 28, 1912—To the Comdg. Gen., Western Division.

A. F. R.

2 Incls. Brig. Gen., Comdg.

(Stamp) Rec'd Western Div., July 30, 1912.

(File number) 3d Ind.

Hq. Western Division, San Francisco, Cal., July 31, 1912—To the Adjt. Gen. of the Army, Washington, D. C.

ARTHUR E. GREEN,
Col. Gen. Staff, in absence of
2 Incls. the Division Commander.

(Stamp) Rec'd A. G. O., Aug. 5, 1912.

(File number) 4th Ind.

War Dept., A.G.O., Aug. 8, 1912—To the C.O., Co. I, 50th Inf., through the Comdg. Gen., Philippines Division.

1—Information is requested as to whether the records of the company show that Corporal Doe served in the field against hostile

natives on the Island of Panay during July, 1907.

2—The early return of these papers is desired.

By order of the Secretary of War:

THOMAS H. SMITH,
Adjt. Gen.

2 Incls.

(Stamp) Rec'd Phil. Div., Sept. 14, 1912.

(File number) 5th Ind.

Hq. Philippines Division, Manila, P. I., Sept. 15, 1912—to the C. O. Co. I, 50th Inf., through the Comdg. Gen., Dept. of Mindanao.

2 Incls.

(Stamp) Rec'd Dept. Mind., Sept. 24, 1912.

(File number) 6th Ind.

Hq. Dept. of Mindanao, Zamboanga, P. I., Sept. 25, 1912—To the C. O. Co. I, 50th Inf., Camp Keithley, Mind., P. I., through the Post Commander.

2 Incls.

To the C. O. Co. I, 50th Inf.

(Stamp) Rec'd Co. I, 50th Inf., Sept. 26, 1912.

(File number) 7th Inf.

Co. I, 50th Inf., Camp Keithley, Mind., P. I., Oct. 4, 1912—To the Comdg. Gen., Dept. of Mindanao, through the C. O., Camp Keithley, P. I.

1—Inclosed are extracts from the post orders and morning report of this company, which contain all that there is of record regarding the service of Corporal Doe referred to herein. Inclosed also is affidavit of Corporal Jones as to Corporal Doe's service.

2—It is believed that the records of the headquarters, Department of Mindanao, may contain the information desired.

(3 Incls. added.) EDWARD FRENCH,
Capt., 50th Inf. Comdg.
5 Incls.

(File number) 8th Ind.

Hq. Camp Keithley, Mind., P. I., Oct. 5, 1912—

To the Comdg. Gen., Dept. of Mind.

5 Incls. A. C. D.
Maj., 50th Inf., Comdg.

(Stamp) Rec'd back, Dept. Mind., Oct. 6, 1912.

Appendix

(File number) 9th Ind.

Hq. Dept. of Mindanao, Zamboanga, P. I., Oct. 12, 1912—To the Comdg. Gen., Philippines Division.

There is nothing on file at these headquarters bearing on the service of Corporal Doe referred to herein.

5 Incls. WILLIAM JONES,
Brig. Gen., Comdg.

(Stamp) Rec'd back, Phil. Div., Oct. 23, 1912.

(File number) 10th Ind.

Hq. Philippines Division, Manila, P. I., Oct. 24, 1912—To the Comdg. Gen., Dept. of Mindanao, with directions to withdraw the affidavit of Corporal Jones, it being proposed to inclose an affidavit from Sergeant Blank, who is on duty at these headquarters and who is prepared to furnish a more complete affidavit than that furnished by Corporal Jones. By command of Major General White:

5 Incls. ANDREW BROWN,
Adjt. Gen.

(Stamp) Rec'd back, Dept. Mind., Nov. 3, 1912.

National Service Library

(File number) 11th Ind.

Hq. Dept. of Mindanao, Zamboanga, P. I., Nov. 4, 1912—To the Comdg. Gen., Philippines Division, the foregoing directions having been complied with.

(Incl. 5 withdrawn.) WILLIAM JONES,
Brig. Gen., Comdg.

4 Incls.

(Stamp) Rec'd back, Phil. Div., Nov. 15, 1912.

(File number) 12th Ind.

Hq. Philippines Division, Manila, P. I., Nov. 16, 1912—To the Adjutant General of the Army, inviting attention to the preceding indorsements and to the accompanying inclosures.

(1 Incl. added.) JAMES O. WHITE,
Maj. Gen., Comdg.

5 Incls.

(Stamp) Rec'd back, A. G. O., Dec. 23, 1912.

Appendix IV

Individual Equipment for Enlisted Men of a Company

Ordnance: Can bacon, carried, 1; can condiment, carried, 1; canteen, carried, 1; canteen cover, carried, 1; cup, carried, 1; fork, carried, 1; haversack, carried, 1; knife, carried, 1; meat can, carried, 1; pack carrier, carried, 1; pouch first-aid packet, carried, 1; spoon, carried, 1.

Quartermaster: Waist belt, worn, 1; breeches, worn, 1 pair; hat cords, worn, 1; drawers, worn, 1; carried, 1; gloves, O. D. (when prescribed), worn, 1; service hats, worn, 1; canvas leggins, worn, 1 pair; overcoat (when prescribed) worn, 1; shirts, O. D., worn, 1; russet shoes, worn, 1 pair; stockings, worn, 1 pair; carried, 2; sweater (when prescribed) worn, 1; undershirts, worn, 1; carried, 1; blankets, O. D., carried, 1; identification tag and tape, worn, 1; poncho, carried, 1; shelter tent half, carried, 1; shelter-tent pins, carried, 5; shelter-tent pole (if not armed with rifle), carried, 1; shelter-tent guy rope, carried, 1.

Toilet Articles: Comb, carried, 1; soap, carried, 1 cake; toothbrush, carried, 1; towel, carried, 1.

Medical: First-aid packet, carried, 1.

Rations: Emergency (as ordered); reserve, carried, 2.

Surplus Kit: 1 breeches, 1 drawers, 1 O. D. shirt, 1 shoes, 1 pair shoe laces (extra), 2 pairs stockings L. W., 1 undershirt. Surplus-kit bags: 1 per squad, 1 for sergeants and 1 for cooks and buglers of companies and 1 for every 8 men of detachments.

Ordnance: Bayonet and scabbard, sergeants 1, corporal 1, cooks 1, mechanic 1, squad leaders 1, privates 1; bolo and scabbard (No. 3 rear rank each odd-number squad); brush and thong, sergeants 1, corporal 1, cooks 1, mechanic 1, squad leaders 1, privates 1; cartridges, caliber .30, sergeants 100, corporal 100, cooks 100, mechanic 100, squad leaders 100, privates 100; cartridges, caliber .45, 1st sergeant 21, bugler 21; cartridge belt, caliber .30, dismounted, sergeants 1, corporal 1, cooks 1, mechanic 1, squad leaders, 1, privates 1; cleaning rod[1] jointed and case (No. 4 rear rank each squad); drift slides, (squad leader 2 No. 4s, 2 No. 6s); front-sight cover, sergeants 1, corporal 1, cooks 1, mechanic

[1] When surplus kits do not accompany command.

1, squad leaders 1, privates 1; gun sling, sergeants 1, corporal 1, cooks 1, mechanic 1, squad leaders 1, privates 1; hand ax and carrier (No. 3 each even-number squad); magazines, pistol extra, 1st sergeant 2, bugler 2; oiler and thong case, sergeants 1, corporal 1, cooks 1, mechanic 1, squad leaders 1, privates 1; pick mattock and carrier (No. 1 rear rank each squad); pistol and holster, 1st sergeant 1, bugler 1; pistol belt with saber ring, 1st sergeant 1; pistol belt without saber ring, bugler 1; rifle, United States caliber 30, sergeants 1, corporal 1, cooks 1; mechanic 1, squad leaders 1, privates 1; rifle fitted for telescopic sight (1 for each two men best qualified to carry them); screwdriver, rifle, squad leaders 1; shovel and carrier (1 to Nos. 1, 2, 3, front rank each squad); steel tape, 5 feet, 1st sergeant 1; telescopic sight and pouch (1 for each man carrying rifle fitted with telescopic sight); wire cutter and carrier (1 for No. 2 rear rank each squad and 1 for each bugler).

Quartermaster: Bugle and sling chevrons, bugler 1 pair; housewife, squad leaders 1; notebook, 1st sergeant 1; pencil, 1st sergeant 1, sergeants, 1, corporal 1, bugler 1, squad leaders 1; whistle, 1st sergeant 1, sergeants 1, bugler 1.

Signal: Field glasses (1 EE to 1st sergeant, 2 EE to two sergeants, 1 A or B to bugler); field message book or notebook, sergeants 1,

corporal 1, squad leaders 1; field message book, squad leaders 1; flag kit (infantry) combination.

Medical: Foot plaster and powder, squad leaders 1.

Engineer: Watch compass, sergeants 1.

Appendix V

Contents of Field Desk (Company) for Period of Three Months (Estimated)

Records: Morning report; duty roster; sick report; summary court manual; company council, check and bank books; field service regulations; unit accountability equipment manual; correspondence book and document file; soldiers' deposit books; retained copy of all allotments; copy of all court-martials; copy last muster roll, pay roll and monthly return; last clothing order; G. O. 39, WD, 1915 (tear out all parts that don't concern company); ration return blank; data cards for muster and pay rolls; last returns of unit equipment; list of QM property held on memo. receipt; list of ordnance property held on memo. receipt; Army Regulations; copies of WD, Reg. and other orders likely to be needed.

Blanks, A. G. O. (see Army Regulations): 12 descriptive lists; 3 descriptive lists (deserters); discharges, honorable, dishonorable, without honor (estimated for period required); 6 furloughs to army reserve; 12 inventory effects deceased soldier; 3 morning report blanks; 4 muster roll blanks; 3 company return blanks;

1 sick report blank; 3 statements of service; 12 summary court blanks; 12 reports of survey blanks; 8 unit equipment return blanks; 2 notification of discharge blanks; final statements (estimated for period required).

Blanks, QMC. (see Circular 12, QMC, 1916): 9 pay rolls, outside sheets; 36 pay rolls, inside sheets; 6 advice soldiers' deposit; 6 soldiers' allotment blanks; 4 soldiers' allotment discontinuance blanks; 6 deposit books; 3 copies of furlough; 3 statements of clothing charged; 4 statements of charges; 6 requisitions for clothing.

Blanks, Chief of Ordnance: 3 form 94, statement of charges; 6 form 146, transfer of ordnance; 3 requisitions for ordnance; 6 form 152, transfer of ordnance (see A. R. 1535).

Stationery (see page 565, G. O. 39, WD. 1915): 1 box rubber bands; 1 book duplicating letter size; 1 rubber eraser; 2 packages black ink powder; 1 tube mucilage; 3 indelible pencils; 2 blue and red pencils; 24 steel pens; 1 office shears; 3 ounces sealing wax; 2 scratch pads; 30 penalty envelopes; 1 box paper fasteners; 1 package red ink powder; 3 blotters; 2 lead pencils; 3 penholders; 1 12-inch office ruler; 1 spool office tape; 1 ball twine.

Appendix VI

Report of Administration

Tabulations showing result of inspections of troops, batteries or, of companies

(Organization), (Place), (Date)

Date of Inspection..... / Organizations.....	Reg. Hq.	QM.	Ord.	Hosp.	A	B	C	D	E	F	G	H	I	K	L	M	MG.	Hq.	S.
Bills of Fare.....																			
Correspondence Book..																			
Document File.....																			
Sick Report.....																			
Morning Report.....																			
Council Book.....																			
Descriptive Lists.....																			
Individual Property Lists.....																			
Deposit Books.....																			
Duty Roster.....																			
Clothing Requisition...																			
Clothing Charged to Enlisted Men.....																			
Court-Martial Cases...																			

Date of Inspection.....																					
Organizations.....	Reg. Hq.	QM.	Ord.	Hosp.	A	B	C	D	E	F	G	H	I	K	L	M	MG.	Hq.	S.
Drill Schedules Posted.																					
Drill Schedules Made..																					
Drill Attendance.....																					
Drill Reports.....																					
Cooking and Messing..																					
Mess Accounting.....																					
Sick Report of Animals.																					
Descriptive Lists of Animals.....																					
C. O. Inspection of Private Animals.....																					
Incinerators.....																					
Fly Traps.....																					
Beneficiary Descriptive Cards Made.....																					
Guard Report.....																					

KEY: 1 equals—Not used when necessary.
2 " Improperly kept.
3 " Irregular.
4 " Yes.
5 " Good.
6 equals—Poor.
7 " No need to date.
8 " No.
9 " Incomplete.

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Appendix VII

Order Governing Details of Instruction

Headquarters Brownsville District,
Brownsville, Texas, August 23, 1916.

General Orders
No. 33

1. The following list of service and roll calls for troops of this command, effective September 1, 1916, is announced:

Reveille, 1st call	5.30 A. M.
march	5.35 A. M.
assembly	5.40 A. M.
Mess call, breakfast	6.00 A. M.
Drill, 1st call	6.55 A. M.
assembly	7.00 A. M.
Privates' school call, Mondays and Wednesdays	10.30 A. M.
Sick call	11.00 A. M.
Mess call, dinner	12.00 Noon
Noncommissioned officers' school call, Tuesdays and Thursdays	1.00 P. M.
Officers' school call, Mondays, Wednesdays and Fridays	1.00 P. M.
Drill, 1st call	4.15 A. M.

Drill, assembly..... 4.20 P. M.
recall ..... 5.20 P. M.
Mess call, supper..... 5.30 P. M.
Parade or Retreat, 1st call..... 6.10 P. M.
assembly ..... 6.15 P. M.
Retreat (when no parade) under arms. 6.20 P. M.
Guard mounting.....immediately after Retreat
Tattoo ..... 9.30 P. M.
Call to quarters.....10.45 P. M.
Taps .....11.00 P. M.

Saturday Inspection:

1st call..... 7.55 A. M.
Assembly ..... 8.00 A. M.

Immediately following Reveille roll call, ten (10) minutes' calisthenic exercises will be held.

If practicable men will have six (6) hours of training daily, to include four (4) hours under arms.

2. The period September 1, 1916, to March 31, 1917, is designated as a field training period, but schools will be held daily, Saturdays and Sundays excepted.

3. The provisions of General Orders No. 17, War Department, 1913, prescribing subjects and methods of instruction, will be complied with. Instruction bulletins from these headquarters, issued from time to time, prescribe classes of

field exercises to be used, and suggest methods. These bulletins are issued primarily for assistance in instructing State troops, and are not intended to restrict the initiative of officers in instructing their commands.

4. The provisions of General Orders No. 19, 1916, these headquarters, will govern where not in conflict with these orders.

5. An allotment of time for instruction of different tactical units will be made by each division commander or commander of a unit not part of a division, at the rate of six (6) days a week, in the proportion of one-half (½) to a company, troop or battery instruction and one-half (½) to instruction of larger units.

In making this allotment the days or fraction of a day will be so assigned, that the instruction of higher and smaller units will progress simultaneously.

The allotment of time having been made, the commander of each unit will submit each Friday, to his next higher commander, a schedule, showing in detail for each day of the ensuing week, the classes of instruction to be given, the number of hours to be devoted to each. These schedules will be made in the form of the schedules now being submitted by inspector instructors of State troops, and will be approved or revised by the commander to whom submitted. Besides showing the work proposed for the ensuing week, the

schedules will contain a report of the work done during the week just past.

6. For convenience, instruction is classified under the following headings:

Drill

There will be four (4) hours drill or four (4) or more hours field exercises daily, Saturdays and Sundays excepted, the cooler hours before 11 a. m. and after 4 p. m. being utilized for drill.

For infantry there will be one or more practice marches of twelve (12) miles by regiment or brigade per week. These marches will be conducted as prescribed in F. S. R., paragraph 96 to 105. They are for instruction in march discipline, and all rules will be obeyed. The uniform rate of three (3) miles per hour (2½ in 50 minutes) actual marching will be maintained.

For cavalry and field artillery, there will be one (1) practice march per week. The provisions of Drill and Field Regulations will be strictly enforced. At least one-half (½) hour per day of the time allotted to them will be devoted by cavalry troops and infantry and engineer companies to preliminary exercises for target practice (position and aiming, pointing and sighting exercises, S. A. F. M.) to be continued after the completion of the prescribed Special Course "B," or other target practice.

This practice is an excellent means of maintaining proficiency in rifle and pistol practice. The subjects embraced in subhead "A," paragraph 4, General Orders 17, 1916, will be taken up under the head of Drill as follows:

Drill of company, battery, troop and all units thereof, mounted and dismounted; bayonet and saber combat, signaling, equitation and horse training, packing, tent pitching, swimming where practicable.

Close-order drill will be limited to the amount necessary to preserve discipline and precision of movement.

Field Exercises

Field exercises when held, will be in lieu of drill. During the period devoted to field exercises, drills will not be neglected. Short field exercises by small units may be held on the same day as drills are held, for example: Simple patrol exercises may be held in part of the drill hours. Paragraph 5, General Orders 17, War Department, 1913, prescribes the subjects appropriate to this period. The immediately important ones are "Security and Information," best studied by means of practical exercises in advance and rear guard, outpost, patrolling and scouting, retreat and pursuit, combat exercises and the maintenance of communication between the different elements of a command; instruction in construc-

tion of hasty intrenchments and more permanent field works; men should be taught at once to get cover by use of intrenching tools, by digging, lying down.

Of special importance to infantry and cavalry are the use of very extended skirmish lines in combat and the use of the leaf sight, 100 yards elevation in close work, instead of the battle sight. These will be practiced in all extended order drills and combat exercises.

Night exercises will be held when practicable —forces involved varied from the company or troop to include the division.

In all combat exercises, both sides should be represented.

All field exercises should be carried out to a logical conclusion, regardless of hours. When likely to last into the afternoon, cooked lunches will be carried. When they will last into the next day, full field kit and full equipment "A" will be carried. A critique will be held after each exercise.

If wagons are not available, application will be made to these headquarters for autotrucks sufficient for the command, three (3) days in advance of the date of the proposed exercise.

SCHOOLS

(1) *The Privates' School:* To embrace the subjects prescribed in (C) paragraph 2, General

Orders No. 19, these headquarters, if this course has not been completed with repetition, where desired.

The day preceding each field exercise, an explanation of the nature of the exercise and the duties required of the soldier in any position likely to be assigned to him, will be explained. A critique will follow each exercise.

Whenever the company, troop or battery has engaged in an exercise, as part of a large command, the full exercise and the part played by the organization will be explained next school day, and the men will be asked as to their knowledge of the exercise, and permitted to express their views, the officer explaining any points not understood.

This not only instructs the men, but is a valuable means of enabling the officer to judge of the interest the man takes in his duty, as well as of the intelligence of the man.

Instruction in making brush revetments, gabions, fascines, hurdles, etc., instruction of men detailed especially as signalmen, packers and any other special work will be given during school hours.

(*2*) *Noncommissioned Officers' School:* So much instruction as is prescribed in (C) paragraph 2, General Orders No. 19, 1916, these headquarters, as has not been completed, will

be completed, and as much as is necessary, repeated.

After the completion of the courses prescribed in General Orders No. 19, referred to above, noncommissioned officers will not attend privates' school, except as assistants to the instructor, but subjects will be so arranged that noncommissioned officers will receive at least rudimentary instruction in each subject before the subject is introduced in the privates' school.

(3) *Officers' School:* Where practicable, there will be a branch of this school for field officers and one for captains and subalterns.

In each of these schools, instruction prescribed for officers' school in (E) paragraph 2, General Orders No. 19, 1916, above referred to, will be completed. The subjects will be enlarged upon by use of instruction bulletins and by lectures by inspector-instructors.

After each field exercise there will be a discussion in the officers' school hour of the exercise and the duties pertaining to each officer and unit which may not have been made clear in the critique immediately following the exercise. Also the school day, prior to the holding of any field exercise, the duties pertaining to each officer and unit of the command will be studied and explained in the officers' school.

The hour designated to officers' school will be largely devoted to these matters.

Appendix

Ceremonies and Inspections

Weather permitting, there will be held four (4) parades each week as follows:

Monday.....1st battalion or squadron
Tuesday.....2d battalion or squadron
Wednesday.....3d battalion or squadron
Thursday .....regiment

Whenever parade cannot be held, retreat formation will be under arms, and will be attended by all company, troop or battery officers of State troops. An inspection of arms and clothing will be made before the organizations are dismissed.

Other ceremonies prescribed by Drill Regulations of the different arms will be substituted for parades from time to time.

Each battalion or squadron commander, accompanied by the company, troop or battery commander will inspect the quarters, kitchens, latrines and grounds of his organization, before noon, each day. He will assure himself that all sanitary and other regulations have been complied with. He will also make the afternoon inspection prescribed in General Orders No. 13, Southern Department, 1916. Company, troop and battery commanders will pay minute attention to the economical handling, and proper preparation of the food.

On Saturday mornings there will be inspection and drill for three (3) hours, two (2) of which will be under arms. At least one-half (½) of the Saturdays will be allowed troop, battery and company commanders for their inspections.

Every Saturday morning, all regimental and detachment supply officers will thoroughly inspect their organizations and equipment, especially their transportation. For this purpose, the wagons will be hitched up and the equipment and separate parts of the wagons and harness, shoeing of animals, will be minutely examined, and any repairs or replacements necessary will be at once attended to. This inspection is of more importance than the inspection of companies etc., as without transportation in fit condition, the troops are of little use. All commanding officers will so arrange the routine of camp supply, as to allow Friday afternoons for preparation for this inspection, and Saturday mornings for the inspection. Only serious emergency will be permitted to interfere with this duty. Nothing in this paragraph will be construed to relieve commanding officers of their responsibility for the condition of all parts of their commands.

Tests

Inspector-instructors on duty with State troops will carefully observe the conduct of drills and exercises of each company, troop and battery

under their instruction, with a view to selecting the most proficient to represent the regiment or smaller unit, in a competitive test to be held at a date to be designated later by these headquarters. Tests of comparative efficiency will be conducted for this purpose where necessary.

ADMINISTRATION

In order that the important and, at present, heavy work of administration and accountability may not be delayed or neglected, officers charged with administrative responsibilities, and their authorized enlisted clerks will, under the supervision of brigade and regimental commanders, be excused from other duties in the afternoon, for such time as is necessary for the proper performance of their administrative duties.

7. Details for the instruction and training of staff troops will be arranged by the staff officers, assigned to this duty by these headquarters.

All staff corps troops will participate in all field work of the tactical units to which they are attached. They will be assigned to duty appropriate to their qualifications.

8. Saturday afternoons will be devoted to athletic sports and amusements, organized by regimental commanders or commanders of smaller separate units.

No functions under arms will take place Saturday afternoons.

The afternoon of the second (2d) and fourth (4th) Saturdays of each month are set aside for regimental athletic meets. Regimental commanders and commanders of smaller separate units will arrange for the conduct of these meets. (See General Orders No. 22, July 28, 1916, these headquarters.)

9. Sundays: One and one-half (1½) hours will be set aside for devotional exercises. During the day, three (3) hours for amusement and entertainment will be set aside. The entertainment will be organized under direction of regimental commanders and commanders of smaller separate units.

10. It is as much the duty of commanding officers to provide healthy amusement and diversion for the men, outside of instruction hours, as to provide the instruction for these hours.

Such forms of entertainment as vaudeville features, boxing and wrestling matches and stag dances are a few of the means for providing entertainment. A search should be made in each regiment for talent among the officers and men which can be used in this connection.

11. Attention is called to paragraph 9, Manual of Interior Guard Duty. In all camps, one (1) company of troop will furnish the entire guard, the remainder of the company or troop so detailed, will be available for general fatigue and police of camp. Men not necessary for fatigue

will be given drill in Manual of Arms, Bayonet and Saber, Fencing or other appropriate instruction.

The fact that a company or troop is on guard is no excuse for absence from drill of men not on guard or fatigue.

By command of Brigadier General Parker:

F. R. McCoy,
Captain, 3d Cavalry, Chief of Staff.

Official:

R. K. Evans,
Lieutenant Colonel, Adjutant General,
District Adjutant.

Appendix VIII

Suggestions for an Inspection of Equipment "A" and Surplus Kits Prescribed in Equipment "B"

(In submitting answers questions will not be written as the numbering of answers is sufficient. Every defect will be corrected without delay and report will be made of action taken upon paper containing answers.)

Battalion: Questions to be answered after a monthly field inspection of the personnel, mounts and material of a battalion, and submitted to brigade headquarters (through regimental commander).

1. How many officers at inspection?
2. (a) Did each officer have full equipment prescribed? (b) State shortages.
3. How many enlisted men at inspection?
4. What was the appearance of enlisted men as regards: (a) Clothing worn? (b) Set-up? (c) Fit and packing of equipment? (d) Neatness?
5. At inspection how many men had corns or needed treatment for their feet?

6. What was the general appearance and condition of feet at inspection?

7. (a) Were any cases of "dhobie" or other itch found on feet? (b) How many?

8. Are all men receiving treatment for bad feet when needed?

9. (a) Were all stockings worn at inspection in good condition? (b) How many were in bad order?

10. How many men did not wear woolen stockings? If any, state by whom authority to wear other than woolen was given and necessity for same.

11. Were all shoes worn at inspection "broken in" and in serviceable condition?

12. Was all clothing serviceable and only that prescribed?

13. Was ammunition in belts the amount prescribed, and was it carried properly in every pocket?

14. Were there any defective pockets in the ammunition belts?

15. Were canteens full and in good condition?

16. Were cups in good condition?

17. Were any canteen covers unserviceable?

18. Were all first-aid pouches in serviceable condition and carried as prescribed?

19. (a) Were all first-aid packets serviceable? (b) How many unserviceable?

20. How many rifles at the inspection?

21. Was every rifle clean and in serviceable condition?

22. Did every rifle have brush and thong; also oil as prescribed?

23. (a) Were the two telescopic sights and the two rifles in each company fitted for those sights carried? (b) If not, why not?

24. Were the bayonets and scabbards clean and in good condition?

25. Was the entire equipment uniformly carried?

26. Were the haversacks uniformly and properly packed, and were all straps for carrying them serviceable in every way?

27. Were all articles prescribed for haversacks carried and were they in good serviceable condition?

28. Were the contents of the condiment bags or cans as prescribed for number of days' rations ordered?

29. Was the bacon can carried top up, if furnished?

30. Was anything carried in meat cans to prevent rattling of knife, fork and spoons, and was pocket for meat can, the can itself, and its contents all complete and in good condition?

31. Was the pack properly and uniformly packed?

32. (a) Were all prescribed articles carried in the pack? (b) Were they all in good condition and serviceable?

33. Were intrenching tools complete in each squad and carried as prescribed?

34. Did every man have a properly marked identification tag with his name, company, rank, etc.?

35. Was all equipment properly marked as prescribed with company, regiment, and number? (All articles are not required to be marked exactly alike, but each kind of article should be marked in the same place and manner. Articles should be marked only as prescribed for the article itself.)

36. Did first sergeants and musicians have pistols; were they clean and serviceable, and was prescribed ammunition carried properly?

37. Did each first sergeant carry a watch compass, a pair of field glasses "EE," a Weldon range finder and pouch, a five-foot and fifty-foot tape, a field message book, a notebook, a pencil and a whistle?

38. Did each sergeant carry a compass watch, a field message book, a pencil and a whistle? Two sergeants in each company should also each carry a field glass "EE."

39. Did each company musician carry a bugle, a bugle sling, a field glass ("A" or "B"), a flag kit, infantry combination, a wire cutter and

carrier, a field message book, a pencil and a whistle?

40. Did each squad leader carry a screw driver (rifle), two No. 4 and two No. 6 drift slides, a roll of adhesive tape, a box of foot powder, a housewife, a field message book or notebook, and a pencil?

41. Did number 4 rear rank carry jointed cleaning rod and case, or were surplus kits carried?

Surplus Kit:

42. Did each man inspected have a surplus kit complete as prescribed?

43. (a) Was each pair of shoes in surplus kit "broken in" and serviceable? (b) How many were found unserviceable?

44. (a) Was every pair of woolen stockings in surplus kit inspected? (b) How many were found unserviceable?

45. (a) Was every suit of underclothing in surplus kit inspected? (b) How many were found unserviceable?

46. (a) Was every O. D. shirt in surplus kit inspected? (b) How many were found unserviceable?

47. (a) Was every pair of breeches in surplus kit inspected? (b) How many were found unserviceable?

48. (a) Was every extra pair of shoe laces

in surplus kit inspected? (b) How many were found unserviceable?

Note: Battalion sergeant major and mounted orderlies should be inspected, but report of result of inspection will be given in report of inspection of headquarters company.

49. Did each company have all the articles given below? If not, state what articles are short.

Quartermaster: Axes and helves, 2; water bags, sterilizing, 1; mosquito bars, single, at least one for each two men; bedding rolls, 1 for each officer; buckets, G. I., 2; candles (if no oil carried); cooking utensils, march kit, 1 G. O. 39-15, 8-15, 22-15; field desk, small, and contents, 1 G. O. 39-15, 8-15; mosquito head nets, 7; combination lanterns, complete, 2; matches, boxes, 24; mineral oil, gallons, 3; neat's-foot oil, pints, 2; pickaxes and helves, 2; powder, hypo of lime, tubes, 50; shovels, S. H., 2; soap, issue, lbs., 12; shoe stretcher, 1; shelter tents, complete, 3; fly-wall tent, 1; barber kit, 1 G. O. 39-15; litters, 1.

Rations: Field, days per man, 2; reserve, days per man, 1.

Ordnance: Stencil, personal, equipment-rifle, 1; ball cartridges, caliber, .30, per rifle, 120; ball cartridges, caliber, .45, per pistol, 21; range finder (B. & L.), 1.

50. Did each battalion headquarters have all the articles given below? If not, state what articles were short:

Quartermaster: Axes and helves, 8; bedding rolls, 2; buckets, G. I., 1; candles (if no mineral oil); colors, 1; field desk, small, and contents, 1; handcuffs, pairs, 1; combination lanterns, complete, 1; matches, boxes, 6; harness mender, 1; horseshoe nails, lbs., 2; mineral oil, gallons, 2; pickaxes and helves, 8; rock salt, lbs., 1; horse shoes, extra, lbs., 2; mule shoes, fitted, lbs., 16; mule shoes, extra, lbs., 4; shovels, S. H., 8; sling, color C. D., 1; pyramidal tent, small, complete, 1.

Ordnance: Packs, small arms ammunition, 2; repair material, combat chest or box (arm-repair chest), 1.

Medical: Box reserve dressings, 1; litters, 3.

Engineer: Reconnaissance outfit, 1.

Grain: Reserve, days (each wagon), 2.

Rations: Reserve, 2; field, days per man on ration section, 2; reserve, days per man on ration section, 1.

51. How many rifles are equipped with spare part containers? (All rifles manufactured since October, 1910, will hold either the spare part container or the oil and thong case. With com-

mands equipped with these rifles the odd-number men should carry oil and thong cases and the even-number the spare-part container.)

52. In these reports unnecessary paper work will be avoided; therefore, in submitting answers questions will not be written. The numbering of answers is sufficient. Each officer will prepare the answer sheets for his organization.

53. As an example, a battalion report would be something like this:

MERCEDES, TEXAS, June 20, 1916.

Third Battalion, Second Infantry.

No. 1. Two.—No. 2. (a) Yes. (b) No shortages.—No. 3. 243.—No. 4. (a) Very good. (b) Fair. (c) Good. (d) Excellent.—No. 5. Two.—No. 6. Very good.—No. 49. No shortages.—No. 60. No shortages.

A. B.
Major, 4th Infantry.

Appendix IX

Order for Athletic Competition and Other Amusements

General Orders
No. —

1. Wednesday, August 16th, 1916, and Wednesday, August 30th, 1916, are designated athletic field days in all regiments and separate smaller commands in this district.

2. Regimental and other commanders and inspector-instructors will arrange for the selection of competitors from each battery, troop, or company of each command to take part in the competitions, prescribed below, and also make all other arrangements for the successful conduct of the field-day exercises.

3. Suitable prizes when necessary will be given the winners of each event, the money being raised from exchange appropriations or donations from company funds, or such other means as may be available.

4. For the first meet, the events will be as follows: 100-yard dash, 220-yard dash, running broad jump, running high jump, quoit pitching (horseshoes to be used), wall scaling (1 squad,

8-ft. wall), boxing, wrestling, and such other contests as are considered desirable.

5. In addition to preparation for the set field days, regimental and other commanders will encourage the organization of baseball, volley and basketball teams, fencing clubs, etc., in their commands.

6. Company, troop and battery commanders will arrange for the amusement of their men by providing amusement tents or rooms in which books, magazines and papers can be obtained. If funds can be obtained by subscription or otherwise, phonographs and pool tables may also be provided.

Appendix X

Notes on Training in Fire Control and Direction

Target Designation

Horizontal Clock Face System (used with visible targets):

System	*Example*
1. Announce direction.	"At 2 o'clock."
2. Announce range.	"Range 1,000."
3. Announce objective.	"A troop of cavalry dismounted."

Procedure

1. All look along a line pointing towards 2 o'clock of a horizontal clock face whose center is at the firing point and whose 12 o'clock mark is directly perpendicular to the front of the firing line.

2. All look at a point about 1,000 yards away on the 2 o'clock line, and—

3. At 1,000 yards on the 2 o'clock line find the objective.

Vertical Clock Face System (used against small or indistinct targets):

System	*Example*
1. Announce the general direction of reference point.	"To our right front" (or at 2 o'clock).
2. Designate a reference point the most prominent object in the zone indicated.	"A stone house with two chimneys."
3. Announce the position of the target with respect to the reference point.	"At 3 o'clock."
4. Announce the range.	"Range 1,000."
5. Announce the objective.	"A hostile patrol of four men."

Procedure

1. All men look to their right front (or along the 2 o'clock line).

2. The reference point (stone house) is found in the indicated direction.

3. A clock face (vertical) is imagined centered on the reference point and the men look along the line leading from 2 o'clock center to 3 o'clock, and,—

4. 1,000 yards away,

5. Find the hostile patrol.

Finger System (used with indistinct or invisible targets and to define sectors):

System	*Example*
1. Announce direction to reference point as in the vertical clock face system.	"To our right front at 1,000 yards."
2. Announce reference point.	"A stone house with two chimneys."
3. Announce angular distance and direction from the reference point to the target.	"Four o'clock, three fingers (90 mils, 2 inches, etc.)
4. Announce range.	"Range 1,000."
5. Announce objective.	"A skirmish line along side of the fence, length about two fingers, right at the dark bush."

Procedure

The reference point is found as explained and the vertical o'clock line upon which the target will be found. The arm is extended to its *full extent,* palm of the hand upwards, fingers held vertically with one side of the hand "against" the reference point. The target will be found on the 4 o'clock line and touching the third finger at 1,000 yards distance, its right flank at the bush and its left flank about 100 yards farther to the

right. Where the mil system is used mils are measured either from a ruler, graduated pencil, or other graduated line held at a certain distance from the eye after the manner of the battery commander's ruler, or the soldier is taught the number of mils which are covered by one of his fingers when held at arm's length. One point of windage is approximately one mil.

Auxiliary Aiming Point System: This does not differ from the other systems so far as the designation of the aiming point is concerned. It is used where the target is invisible or offers an aiming point which is so indistinct as to render the fire ineffective because of the lack of a suitable holding point. In such a case, and when the landscape affords a suitable aiming point which is within the same sector as the target, men are told to aim at the good aiming point or line but with such a sight setting that the bullets will fall on the target instead of on the aiming point. Within limits an aiming point may be chosen which is slightly to one side or the other of the target, an approximate deflection being set off on the wind-gauge.

Example: The enemy is on a line 300 yards in front of a white road, a hedge, etc. The small target furnished by the line of heads will not afford a good aiming point, while the white road, the hedge, etc., 300 yards directly in rear is a

good aiming point. Here the men might be directed to aim at the road with a sight setting slightly less than the true range to the target, it being assumed that the terrain is flat. Where the auxiliary point is above the target a lower sight setting will be required than the true range, and conversely where the aiming point is below the target a higher sight setting will be required. To avoid a negative sight setting, the aiming point should be below the target if possible. The correct sight setting is a matter of judgment. Various mechanical devices exist which give a correct sight setting, but judgment, reenforced by observation of the effect of the fire, will generally be the only method available.

Covering Fire: It is a cardinal principle that the whole target must be kept under fire during an advance. To this end the whole target is usually divided into company sectors and a definite part of the company sector is assigned to each fire unit. When any fire unit ceases its fire, as when advancing for example, arrangements must be made for some other unit to take up the work in its assigned sector. (Par. 413, I.D.R.)

This may be accomplished by one of two general methods: 1. By assigning more than one fire unit to each sector (overlapping method). 2. By assigning one platoon to the duty of replacing the fire lost by the cessation of the fire in the other platoons (switch method). Each

method has many variations, and each has its appropriate occasions, but care should be exercised that in adopting a variant, one is chosen that is simple, practicable, and does not endanger advance portions of the line. The following are typical examples of the two methods in detail.

Overlapping Method: (Par. 413, I.D.R.) With four platoons in the company the company sector is divided into two parts, each of which is covered by two adjacent platoons. When one of these platoons ceases fire to advance, the other, having the same sector, replaces the lost rifles by firing faster. With three platoons the company sector is divided into two parts, one is assigned to each flank platoon and the whole company sector to the center platoon. With two platoons, each takes the whole company sector.

Switch Method: The company sector is divided into a number of parts one less than the number of platoons in the company. One platoon is designated as the "switch" and swings its fire automatically into that sector from which the fire of its assigned unit is withdrawn. Thus with four platoons and platoon rushes to start from the right, the company sector is divided into three parts assigned to the first, second and third platoons, the fourth being the "switch." Number one ceases fire to advance, number four fires at number one's target, number two ceases and

number four fires at number two's target, then at number three's target, and finally number four advances.

Variants which call for more complicated solutions than this generally will fail in action, and even this can be used only by trained troops well in hand. Danger to advanced or advancing portions of the line is minimized by this method, but control by the corporals at platoon divisions must be the best protection in all cases.

PRELIMINARY MUSKETRY TRAINING—FIFTH BRIGADE

Ranging—Exercise 1; Exercise 2.

Target Designation—Exercise 3; Exercise 4.

Communication—Exercise 5; Exercise 6.

Fire Discipline—Exercise 7.

The problems included in this bulletin are published as suggestions for the elementary training of individuals and squads. To assist organization commanders in their work of formulating problems for larger units, the following general rules are included and their attention is directed to the field-firing problems published in the S.A.F.M., nearly all of which can be slightly altered so as to serve as preliminary training problems without ammunition or special apparatus.

Appendix

Targets

1. As silhouettes are not available, it will be necessary to represent targets with individual soldiers; with this in view, it is recommended that regimental and battalion commanders arrange the instruction in their organizations so that sufficient men will be available for use as targets.

2. With reference to their visibility, the battle field will present three classes of targets: (a) Those which are visible throughout. (b) Those which are visible in part. (c) Those which are invisible, but whose location might be described.

In these preliminary exercises, targets should be arranged to simulate one of the enumerated classes. Instruction should begin with simple exercises in which the target presented is plainly visible and represents only the objective of the unit undergoing instruction. It should progress to the more difficult exercises in which the target is invisible and the line of figures is prolonged to include the objective of units on the right or left.

3. The limits of indistinct targets may be shown to unit commanders by the use of company flags. These flags, however, should be withdrawn from sight before a description of the target or an estimate of the range is attempted and before any one but the commander of the unit undergoing instruction sees their location.

4. At the conclusion of each exercise, in which flags are used to mark the limits of the target or its subdivisions, they should be displayed, in order that any existing errors may be readily pointed out.

5. To determine proficiency in target designation, the instructor will provide a sufficient number of rifles, placed on sand bags or other suitable rests, and require those charged with fire direction and control to sight them at the limits of their objective. An inspection by the instructor will at once detect errors. Similarly, in those exercises in which all the members of the firing unit participate, the percentage of rifles aimed at the correct target may be determined.

6. In these preliminary exercises no method of communication will be permitted that could not be used under the conditions assumed in the problem.

Exercise 1—*Ranging*

Object: To train the individual to set his sight quickly and accurately for the announced range and windage; and to accustom leaders to the giving of windage data.

Situation: The company is formed in single rank at the "Ready" with the rear sight set at zero and the slide screw normally tight.

Action: The range and windage is announced, sights are set accurately in accordance therewith

and as rapidly as may be, each man coming to port arms immediately upon completing the operation.

Time: Time is taken from the last word of the command.

Standard: Sights should be correctly set within 15 seconds.

Note: Of the two elements, time and accuracy, the latter is the more important.

Par. 411, I.D.R., implies complete use of the rear sight, that is, utilization of the wind gauge, and sight setting to the least reading of the rear sight leaf, i.e., 25 yards. Sight setting therefore in this exercise should include, more often than not, "fractional ranges" and windage data.

Exercise 2—Ranging

Object: To familiarize officers and noncommissioned officers in the use of an auxiliary aiming point.

Situation: Two men with the company flags are stationed to mark the enemy's invisible position. This position should be suitably located with reference to a practicable aiming point.

Action: The markers are signaled to display their flags. An officer or noncommissioned officer is called up and the enemy's position is pointed out. The flags are then withdrawn and the officer or

noncommissioned officer selects an auxiliary aiming point and gives his commands for firing at that point.

Exercise 3—Target Designation

Object: To train the individual soldier to locate a target from a description solely. To do so quickly and accurately and fire thereon with effect, and to train officers and noncommissioned officers in concise, accurate and clear description of targets.

Situation: The men are so placed as not to be able to see the target. The instructor places himself so as to see the objective.

Action: The instructor, to one man at a time, describes the objective, and directs him to fire one simulated round. The man immediately moves so as to see the target, locates it, estimates the range and fires one simulated shot.

Standard: For ranges within battle sight, time 20 seconds; beyond battle sight, time 30 seconds. Not more than 15 per cent error in the estimation of the range. Objective correctly located.

Note: Arrangements made so that the description of the target is heard by only the man about to fire. After firing the man will not mingle with those waiting to fire.

Appendix

Exercise 4—Target Designation

Object: To train the squad leader in promptly bringing the fire of his squad to bear effectively upon the target presented. To train the individuals of a squad to fire effectively from orders of the squad leader and automatically to obtain effective dispersion.

Situation: The squad is deployed, the squad leader being in the firing line. Position prone. A sighting rest is provided for each rifle.

Action: Upon the appearance of the target the squad leader gives the necessary orders for delivering an effective fire. The men under these orders sight their rifles and then rise. The instructor then examines the position and sighting of each rifle.

Time: Time is taken from the appearance of the target until the last man has risen.

Target: A squad of men to outline a partially concealed enemy emerges from cover, advances a short distance and lies down.

Standard: Ninety per cent of the rifles should be sighted in conformity with the orders of the squad leader and should evenly cover the whole front of the objective. The squad leader's estimate of the range should not be in error over 15 per cent.

Note: The squad leader should not in general be allowed to divide the target into sectors, but to obtain distribution by training the men to fire at that portion of the objective directly related to the position they occupy in their own line. The exercise should be repeated with the squad leader in rear of the squad and not firing. As to this, it is to be noted that musketry school experiments prove that in small groups the directed fire of say seven (7) rifles is more effective than the partially undirected fire of eight (8) rifles obtained when the group leader is himself firing.

Exercise 5—*Communication*

Object: To teach prompt and accurate transmission of firing data without cessation of fire, and also to teach automatic readjustment of fire distribution.

Situation: A squad deployed in the prone position and with sighting rests, is firing at a designated target.

Action: A squad with sights set at zero is deployed and brought up at the double time into the intervals of the firing line and halted. The firing data is transmitted to them without cessation of fire. At the command "Rise," given 20 seconds after the command "Halt," the first squad rises and retires a short distance to the rear. At the same time, the supports cease fire and adjust their

rifles in the rests so as to be aimed at the target as they understand it. They then rise and their rifles are examined by the instructor for range and direction.

Standard: Eighty per cent of the rifles should be sighted according to the transmitted data and aimed according to the principles of fire distribution.

Target: One target equal to a squad front, which is increased to two squads prior to the arrival of the supports in the firing line.

Note: This exercise should be repeated with the supporting squad reenforcing on a flank. To determine whether the original squad is able to keep its assigned sector during an advance, this exercise should be repeated, the supports being thrown in after a series of short advances by the original squad. Care should be exercised to prevent the transmission of firing data in a manner under which service conditions would be impracticable. (See Exercise 6.)

Exercise 6—Communication

Object: To train the squad leader in receiving and transmitting instructions by visual signals alone.

Situation: A squad with its leader in the firing line is deployed in the prone position firing at will.

Action: The instructor, without sound or other cautionary means, signals (visually) to the squad leader at various intervals to: First—Change elevation, swing the fire to the right or left, suspend the firing, etc., etc. The squad leader, upon receiving a signal, causes his squad to execute it without verbal command or exposing himself.

Time: No specified time limit.

Standard: The squad leader should fire with his squad, but after each shot should look towards his platoon leader for any signal, then observe the fire and conduct of his men, then, after glancing again at his platoon leader, fire again. This the squad leader should do without exposing himself. By lying about a head's length ahead of his men he can see his squad front. In transmitting orders he can accomplish it by nudging the men on his right and left and signaling to them with his hand.

Note: This exercise is essential to prepare men for the deafening noise of a heavy action when speech or sound signals are largely futile.

Exercise 7—Fire Discipline

Object: To train men to carry out strictly the fire orders given them, and to refrain from starting, repeating or accepting any change therefrom without direct orders from a superior.

Situation: A squad deployed in the prone position.

Action: While the squad is firing at an indistinct but specified target, another and clearly visible target appears in the vicinity of the first target but not in the same sector. Upon the appearance of this second target, the instructor sees that the men continue firing at the assigned target. The corporal should check any breach of fire discipline.

Note: Variations of this exercise should be given to test the fire discipline of the men in other phases, such as rate of fire (Par. 147, I.D.R.), etc.

The Finger

The "finger" is the width of the forefinger held at such a distance from the eye that it subtends 50 mils. It is also the width of the rear sight leaf seen in the position of aiming, which in the average case covers 50 mils (1-20 of the range).

Communication

Due to the tremendous uproar and confusion of modern battle, the use of every class of signals has become indispensable. Unbroken communication is essential to efficiency throughout the entire military organization. This is maintained by systems adapted to the fields in which used.

In a well-organized military force, contact is regularly maintained between the War Department in the capital of the country and the most distant patrol in the field. Each subordinate maintains contact with his commander. This principle is maintained from private through squad, platoon, company, battalion, regiment, brigade, division, field army, army and base of operations to the capital. The only equality in rank in the military service is, possibly, to be found among the private soldiers. Every military man has a higher authority to whom he reports and from whom he receives orders. It is this principle that makes an army a unit—without it, a force lacking cohesion.

The systems used for conveying military information are:

First, electricity; second, messengers; third, visual signals; fourth, sound signals; fifth, vocal commands.

The means and particulars of these systems are set forth at length in the various service manuals, and in a particular manual on communications published by the School of Musketry, of which the following résumé will give a general idea:

Efficiency in the means of communication is essential to the coordination of units and the attainment of success in battle.

All systems of communication contribute to a common end—the efficiency control of troops in

attack and defense. By efficient intercommunication, the movements of all the armies in the theater of operations are coordinated. Within each force, great or small, the lines of information permit the commander to utilize his forces as a unit. By combining reports from the detachments in contact with the enemy the commander keeps informed of events along his entire front. Information passes continually from front to rear. Instructions, orders, and commands pass from headquarters to the front, spreading fanlike until the will of the commander is known at the most distant points.

On a modern battle field, stretching over miles of front, communication is an important and highly developed science. Regiments no longer carry streaming banners to indicate their progress and location. It is true that each headquarters may display a distinctive flag, but this will mark the position of brigade and higher commanders in a modest manner for the benefit of messengers.

After the supreme commander has assigned missions or sectors to the various units of his command and ordered the advance he observes the progress of events closely and handles his reserves as the conditions warrant. All the information comes to him over the lines—telegraph, radio, telephone, buzzer and messenger—established by the Signal Corps. These lines,

however, do not extend far into the zone of hostile fire.

To the front of brigade headquarters—in the second zone—the information is transmitted by messenger, visual signaling or bugle. The brigade commander divides his objective among the regiments constituting the firing line. The colonel usually places one battalion in the regimental reserve and gives each of the two battalions sent forward one-half of the regimental objective. The major, holding back a support, divides the battalion sector between his companies on the firing line and pushes the attack against the target assigned him. The captain assigns the company target among his four platoons in such a way as to insure the maximum fire effect during the advance. The platoon chief points out the position of the target assigned to each of his four squads, and the corporals require each man to fire at the part of the squad target before him.

During the fire fight, the messengers and signalists maintain connection between brigade and regimental headquarters.

For this purpose the brigade commander is furnished three staff officers and authorized enlisted men.

The colonel has with him one staff officer and three or four enlisted men, including a mounted sergeant, all trained messengers and

signalists, for communication back to brigade headquarters and forward to the battalions.

The battalion is in a zone of hostile fire—the third zone. Here messengers must move with caution, if at all. The wigwag and semaphore can be used only when concealed from view of the enemy. The major and his staff—one officer and two enlisted men—avoid exposing themselves unnecessarily to the view of the enemy. Flag communication with, and vocal control over, the companies on the firing line being out of the question, the major, his adjutant and sergeant major carry whistles, a short note of which attracts the attention of the captains. The sergeant major is especially charged with the duty of maintaining communication with the firing line and, when there is but one range finder to a battalion, of obtaining ranges. The orderly, a trained messenger and signalist, maintains communication with regimental headquarters. The adjutant performs such duties as the major directs.

The captain directs the fire and advance of his company under the orders of the major. The normal position of the captain is prone, or nearly so, in the rear of his company. Any upright position would draw the fire of the enemy on his organization as well as on himself. The captain governs his four platoons by means of arm and hand signals made from the prone position.

He is also charged with observing the fire effect of his command advancing within his sector and maintaining contact with the major. To assist him in keeping six different points under observation the company commander is provided with two assistants, the company buglers, each of whom is equipped with field glasses and signal kit. The captain and two buglers each carry a whistle of different note from the major's. One of the buglers is charged with the duty of observing the major for signals—turning instantly at the note of the battalion whistle. As instructed, he notifies the captain when the major has whistled "Attention," or receives the signal, repeats it back, and informs the captain of the message. The other bugler keeps the platoon chiefs under observation, listening for their whistles, notifying the captain or transmitting the signal as ordered.

The platoon chief is charged with the fire control of his platoon. His position is prone behind his unit, with a platoon guide on his left; each carries a whistle different from that of the captain or major. The platoon chief controls the fire of his four squads through the corporals. Neither the platoon chief nor guide pay any attention to the major's whistle, knowing that its note is a signal for the captain only. When the captain's whistle blows, however, the guide—unless otherwise instructed—turns at once, receives the

captain's signal, repeats it back and transmits the information to his platoon chief, who has not withdrawn his attention from the fire effect of his squads. The platoon chief blows a short note on his whistle, thus securing the attention of his four corporals without affecting the fire of the men. He transmits the captain's will to the corporal or corporals concerned by arm and hand signal.

The corporal is in immediate contact with and control over his squad. From his position just behind his seven men, he can speak to one or all of them, roll over and touch a man requiring special attention without rising or otherwise drawing hostile fire. The corporal pays no attention to the whistle of the major or captain. He turns at once at a note from the distinctive platoon whistle. If the signal is for him, he receives and repeats back the message, and turning to his squad, transmits the order by voice and touch if necessary.

The entire attention of the private belongs toward the enemy. Once the fire fight is opened, all of his orders come from his squad leader. His duty lies to the front, continuing to fire at the target with the sight setting and at the rate ordered. The private turns at no whistle whatever. None are blown for him. The last man to look to the rear at a whistle signal is the corporal. For the private to heed any whistle

signal "Attention" is a military offense, as he is diverting his attention from the enemy. The squad organization and office of the corporal relieves the private of all such distractions and allows the private to devote his entire attention to doing his part to secure and maintain fire superiority, and close with the enemy.

Such are the channels of military communication. It will be observed that perfection in the means possible in the third, fourth and fifth zones—the zones of hostile fire—will permit the will of the supreme commander to be carried out as he planned—failure in these simple lines of communication, the messenger, flag, whistle, arm and hand, and last but not least, the voice and personal touch of the corporal, marks an untrained command, lack of teamwork, and possible defeat.

Range Finding

Six trials with self-contained base range finder at ranges from 1,500 to 4,500 yards, using well-defined objects as targets, aiming points, or registration marks.

The range finder will be set up, put in gear and focused, but will be out of direction at the beginning of each trial.

The object to which the range is to be found having been identified by the candidate, the

examiner commands, for example: 1. Registration mark, that tree; 2. Measure the range.

At the last word of the last command the candidate measures the range and announces, for example, 3300. He then steps clear of the instrument.

No credits are given if the range announced is not within 5 per cent of the correct range, as determined by the board with the instrument used.

If the range has been correctly measured and announced within the limits prescribed, credits are given as follows:

	Within 3 per cent of range			Within 5 per cent of range		
Time in seconds, exactly or less than.....	15	25	30	15	25	30
Credits.....	2.0	1.8	1.6	1.5	1.4	1.3

The ability to determine distances and ranges correctly is of preeminent importance to the officer.

When in action this accomplishment enables him to make effective the fire of the troops which he commands. Its absence often causes him to dissipate and make worthless their fire.

In an estimating distance test made at Leon Springs, Texas, July 12, 1913, the distance being

750 yards, twelve officers out of ten made an error of 100 yards or over, and four officers made an error of 200 yards or over. The latter error, at this range, would throw the center of a shot group 6 feet above or below the point aimed at.

It is evident that, for officers, instruction in estimating distance, in addition to that given in the regular course of firing, is necessary.

To accomplish this, the regimental and all smaller separate organization commanders will from time to time assemble all officers for a competitive test of estimating distances. The results of these tests will be published.

To prepare for this test, officers should take advantage of all favorable opportunities, in order that by constant practice expertness may be obtained.

Such opportunities, it is suggested, may be had when troops are proceeding to, or returning from, drill; during rests at drill; during practice marches; and at other times.

It would be well if occasionally noncommissioned officers shared in this instruction.

Regimental and all smaller organization commanders are charged with the details necessary to facilitate this training.

In this connection it is suggested that officers will add to their value for active service by the habit, when traveling through the country, of

picking out positions which seem suitable for defense, analyzing their advantages or disadvantages, in the way of lines of approach, etc., and estimating the ranges to the probable positions of an attacking force.

Appendix XI

Practical and Theoretical Instruction in Machine-gun Companies and Troops and Tests for the Efficiency of the Organization

1. The following outline of practical and theoretical instruction for machine-gun companies was adopted for the machine-gun companies in the El Paso and Brownsville districts:

(A) *Machine Gun:* Nomenclature, function of parts, care, preservation and repair of machine guns.

(B) *Enlisted Men:* Duties of the individual soldier in the service of (a) the piece; (b) the gun squad; (c) the ammunition squad; (d) the pack squad.

(C) *Packing:* To include packing and carrying of various kinds of loads and the arrangement of the machine-gun equipment.

(D) *Animals:* The care of animals and instruction in equitation for mounted men of the company.

(E) *Pistol:* Nomenclature, care and use of pistol.

(F) *Drill:* To include instruction in the mechanism and celerity of movement of the nature and with the same object as close and extended order for infantry companies; application of signals to drill; movements; estimating distances; selection of firing positions; ammunition supply; use of sight; instruction in loading and the use of various kinds of fire; athletics and gymnastic exercises.

(G) *Mechanism of Gun:* (1) Disassemble and reassemble; naming parts and functions. (2) Take apart and reassemble blindfold; take time of these operations (one minute twenty-five seconds is good time).

(H) *Jams:* Illustration and practical demonstration of jams and instruction in the reduction of same.

(I) *Signaling:* Flag and semaphore.

(J) *First Aid:* Instruction in first aid, the hygienic care of the person and the care of the feet on the march.

(K) *Rations:* Individual cooking and use of the reserve rations.

(L) *Messages:* Receiving and delivering verbal messages.

(M) *Marching:* Instruction in marching and camping; pitching shelter tent camps; inspections.

(N) *Field Fortifications:* To include construction of hasty cover for guns; gun pits with overhead shelter, also adaptation of the various types of infantry trenches for machine-gun use.

(O) *Firing:* Actual firing to instruct in the use of the various kinds of fire, viz: searching, distributed, fixed, intermittent, continuous, and the use of combined sights exercises in reloading; description, marking and manipulation of targets.

(P) *Combat:* Training to consist of simple problems involving the following: Selection and occupation of positions; use of various kinds of fire; use of ranging fire; advancing to position; ammunition supply; use of cover; and operation of the company as a whole; tactical walks.

(Q) *Combat Practice:* With service ammunition (to include at least two exercises in night firing).

(R) *N. C. O. School:* Subjects: (a) Drill regulations for M. G. Co. (b) Machine-gun Firing Manual. (c) Theory and practice in use of range finders. (d) Map making and map reading. (e) Preparation and transmission of orders and messages. (f) Field engineering,

including construction of simple bridges, repair of roads; cordage.

(S) *Conferences:* Subjects: (a) History of machine-guns in war. (b) Tactical use of machine guns. (c) Selection and occupation of positions for machine guns. (d) Types of machine guns. (e) Types of packs.

2. In addition to the foregoing, the following is prescribed: (a) Manipulation of the gun in daylight, gun crew to be blindfolded, and manipulation by night. (b) In addition to the foregoing, companies equipped with the Lewis guns will practice packing and hauling in Ford or other automobiles and trucks. (c) Under subparagraph "O," paragraph 1, companies equipped with the Benet Mercier guns will keep record of gas pressure under varying conditions, familiarizing themselves with the peculiarities of each gun and keeping record of them for future reference.

The following machine-gun tests for infantry and cavalry were made from time to time to foster competition among the several regiments:

Preparation for a March:

	VALUE
Full equipment "A" to be laid out, but not packed.	
Pack for the march and march one (1) mile	5

Inspection of arms and equipment to be as follows:

	VALUE
Security and arrangement of personal equipment	2
Cleanliness and serviceability of personal equipment	2
Completeness of personal equipment and neatness of clothing	2
Packing of mules or automobiles	2
Completeness of equipment other than personal	2
Grooming and shoeing of animals, or cleanliness and serviceability of automobiles	3
Drill of company or troop	2
Training and handling of animals, or handling of automobiles	3

Selection of position for guns by captain assisted by platoon chiefs to be marked as follows:

For defensive operation	5
To assist an attack	5
To assist a withdrawal	5
Manner of occupation of selected position (use of cover, concealment)	3
Quickness in getting into position	3

	VALUE
Arrangement for supply of ammunition (position to support attack to be used)	3
Construction of hasty cover on site selected for defensive position to be marked as follows:	
Shortest time	5
Longest time	0
Intermediate in proportion:	
Protection from rifle fire	5
Protection from shrapnel fire (overhead cover)	5
Concealment	3
Individual tests to be marked as follows:	
Officers:	
Estimating distances	4
Writing report of position selected for defensive	4
Noncommissioned Officers:	
Map reading (all N.C.O.)	4
Position sketch 1-square mile showing position of guns in defensive position (2 N.C.O.)	4
Range finding with range finder (N.C.O.)	4
Privates:	
Estimating distances (4 privates)	2

Privates:	VALUE
Signaling, flag (2 privates)	2
Signaling, semaphore (2 privates)	2
Receiving and delivering verbal messages (1 private each gun)	2
First aid (4 privates)	2
Taking apart and assembling gun, blindfold (1 private each gun)	3
Reducing jams (1 private each gun)	2

Appendix XII

Instructions for Use of Dummy Hand Grenades

1. The weight of one hand grenade complete is one pound.

2. Having taken the grenade from the bandolier in which it is issued, the tin box is opened by tearing off the soldering strip which releases the cover of the can. The hand grenade having been removed from the container, the grenade must be armed before it is thrown, and this is done by removing the safety disk. Having armed the fuse of the grenade and replaced the hood in the proper armed position, the grenade is ready to be thrown. In this condition the grenade should be carefully handled and not permitted to strike either on the ground adjacent to the thrower or in the vicinity of friendly troops. The thrower and all friendly troops should have cover before the grenades strike, as the fragments resulting from their detonation have a longer range than the distance to which the grenade as a whole may be thrown. The cord of the grenade is made in a convenient length for the soldier of average stature, but this length

may be decreased by pulling the cord through the knob and tying in a new knot. The manner of throwing the grenade is dependent upon the free space available for swinging it. When the thrower has ample space behind a parapet, it is best to swing it around the head as with a sling, both for accuracy and safety. Untrained men will naturally swing the grenade in a vertical plane. The tests at Sandy Hook Proving Ground indicate that this method is accompanied by considerable danger, as the thrower may strike the ground with the grenade in the act of whirling it or may release it so that its flight will be nearly vertical, causing the grenade to fall back near the thrower. The ranges that can be attained with this form of grenade are not great and vary with the strength and skill of the thrower. The cord of the grenade should also be examined to make sure it is in good condition and not liable to break while the grenade is being whirled.

To obtain accuracy and range in throwing the hand grenade requires preliminary drill and practice with the dummy grenade. For maximum effect the grenade should be detonated within a few feet of the object at which it is thrown. This requires accuracy usually acquired only by a considerable amount of practice.

Appendix XIII

Trench Digging

The best results in trench digging, whether for purposes of drainage or defense, will always be obtained by carrying out the principle laid down in the engineer manuals of having shifts of men.

With uninstructed troops it is best to have three shifts, each shift working for ten minutes at high pressure, resting for twenty minutes. Further, when several companies, platoons or squads are employed, a task should be given to each, a section of the ditch being marked off for the purpose; they should be informed that their work ceases as soon as the task is completed.

By this method remarkable results can be obtained and the work can be finished in much less time than in the usual manner of fatigue detail. The men also work more uniformly.

It is desired in digging ditches that when possible they be laid out as, and have the form of, *defensive trenches*, with the necessary traverses, etc. In this way the men will obtain very necessary instruction in a very important art.

ENGINEER INSTRUCTION

1. *Reconnaissance:* Selected men from each company, troop or battery will be given instruction in the use of the reconnaissance equipment covering the work of road and position sketching. This work will be undertaken as soon as troops are sufficiently well supplied with their engineer-unit accountability.

Similarly, cavalry will be given instruction in the use of the demolition equipment.

2. *Field Fortifications:* Each infantry regiment will be given instruction in the construction and use of trenches. This will be progressive. The men will be taught the use of their intrenching tools to gain hasty cover, and later the construction of firing, communicating, and support trenches.

For each battalion there will be laid out on the ground the trace of a firing trench sufficient to be occupied by it, communicating trenches leading therefrom to the support trenches, with the locations of the support trenches themselves, of the kitchens, latrines and dressing stations marked and the trenches which would lead from the support trenches to the reserves. All of these trenches will be marked out on the ground, using white tracing tape. Each company of each battalion will construct, working in reliefs, a sufficient length of full-size firing trench to accommo-

date two (2) squads. Subsequently, the portion of this trench sufficient to accommodate one (1) squad will be improved.

3. Each machine-gun company of infantry and troop of cavalry will construct an emplacement for a machine gun.

4. Each battery of artillery will construct an emplacement for one gun.

5. *Revetments:* The construction of hurdles, gabions and fascines will be taught, and each company and troop will be required to make one of each of these, and their use as revetting material will be illustrated by actually placing them in the trenches which the company or troop has constructed.

Appendix XIV

March of Infantry

"Distances, intact ranks, and alignment and covering of squads will, as far as practicable, be preserved, and the *left half* of the road kept free, both at a halt and on the march, for the use of messengers and higher commanders. The piece will be carried with the muzzle so elevated that the man following need not lose distance to protect his face.

. . . . . .

"The preservation of march discipline is primarily the duty of file closers and company commanders, who should be constantly on the alert to check the first tendency toward elongation; but all commanders from the company up should, from time to time, permit their units to pass by for the observation and correction of defects. If, notwithstanding due care of all concerned, elongation of the column takes place (and with the best trained troops and excellent march discipline such cannot altogether be prevented), no effort should be made by increasing the gait, or continuing to march after the head of the column has halted, to close gaps. Dis-

tance once lost must remain lost until a long halt (of an hour for example) or until the end of the day's march. Nothing takes so much, and so quickly, from the stamina of the heavily loaded infantryman as hurrying his steps or double timing to regain any considerable distance.

. . . . . .

"Proper pace setting, which includes the greatest regularity and a correct rate, is of the utmost importance. All company officers should be carefully trained therefore. Each should determine the exact number of his paces per minute for the standard—1 mile in 20 minutes—by actual pacing of measured miles, and when the duty of pace setting devolves upon him, he should constantly count his steps and check his rate with the watch.

. . . . . .

"The pace of marching troops must not be regulated by that of some mounted officers' horse.

"It is noted that troops are sometimes assembled either to begin a march or after a halt, much sooner than is necessary. A command should never be late; but on the other hand, it should never cut short the men's rest by being much ahead of time. Care in the calculation of distances and in the estimate of time required for getting into motion, will enable much of the irri-

tating and wearisome waiting in ranks, to be avoided."

Although it is appreciated that the infantry troops of each command have achieved a first-rate marching ability, the foregoing extracts are published to give to all an appreciation of the requirements for successful marching of large bodies of troops. Distances are, as stated above, sometimes unavoidably lost—as in passing defiles or crossing streams and other obstacles. If these distances must be made up, the head of the column should halt until the lost distances are closed.

It is true that small detachments (even as large as a regiment) of well-seasoned troops can march at a rate of more than a mile in twenty minutes, but years of experience have taught that for bodies of any size the rate of one (1) mile in 20 minutes is the only proper one.

A French report, at the beginning of the present war, recounts the march of a division for twelve (12) miles in three and three-fourths (3¾) hours as a remarkable achievement.

It is suggested that at ceremonies and on other occasions where music is used the bands be required to play only selections where the drum beats are clear and regular and used to mark the time throughout.

Appendix XV

Rules for Conduct of Troops Traveling by Railway

1. Traveling by rail, each officer is entitled to a double lower berth, standard sleeper, but may be required to occupy an upper berth. Each enlisted man is entitled to one half, double lower berth or one upper berth, tourist sleeper.

If day coaches are provided, men are assigned at the rate of three (3) men to each two (2) seats. If trip is over twenty-four hours, one (1) seat per man should be furnished, if possible.

2. Commanding officers of each train and of each section, before entraining, should inspect the passenger cars to see that they are clean, supplied with water and ice, and that coolers, urinals and toilet seats are in good order; the stock cars—to see that they are clean, that there are no projecting nails, bolts or splinters, no loose or rotten boards in the floors, no broken fixtures on hay racks, floors, doors or troughs, and that suitable noninflammable footing (sand or loose earth) has been provided.

The cars having been accepted, an officer will be detailed to mark with chalk on each car,

the number of men or animals to travel in it, with the letter or other designation of organizations.

3. Trains divided into sections should be so arranged that the baggage, and if possible the animal box and gondola cars carrying the material pertaining to any of the troops, be attached to the same section as are the troops. In case it is necessary to divide the trains otherwise, the sections carrying animals should precede the others and an officer with a sufficient detail to take care of any emergency should travel on each section carrying animals and baggage.

4. Heavy baggage, and baggage not likely to be required immediately on arrival at destination, will be loaded as soon as box cars are available. Cars will be assigned to organizations, so many to each battalion or squadron, etc. Where (as will usually be the case) one car is assigned to two or more companies, troops or batteries, proportional space will be allotted each organization by the commanding officer or officer delegated by him. Artillery guns and carriages, escort wagons and other classes of wheeled transportation are generally loaded on gondola or flat cars. They must be made secure by nailing blocks of wood, under and on each side of each wheel and by means of lashings. Commanding officers or officers detailed by them are charged with seeing that this is attended to properly.

5. Transportation is loaded after it has hauled all property to be taken to the cars. Animals are loaded after wagons have been loaded, unless they can be loaded simultaneously with the wagons. Harness is loaded with the wagons. Horses and mules, with halters only, are loaded in the stock cars provided—through chutes, or from platforms, if any are available, or for lack of either, by means of ramps. For each section carrying animals, there will be constructed a portable ramp, to be carried on a flat car, or lashed to the roof of a stock car. Such a ramp may be constructed as follows: Lay three (3) pieces, 4"x4" lumber, 18 feet long, on the ground so as to be parallel and 2 feet between centers (if no 4"x4" is at hand—two 2"x4" pieces securely nailed together will answer). To these pieces (sleepers) nail securely a floor of 2"x12" lumber 6 feet long (a double floor of 1"x12" will answer). To the outer edges nail side rails of 2"x4" lumber, cleat the floor by nailing 1"x4" boards over each crack. This ramp may prove very useful in case of an accident where unloading becomes necessary and the usual facilities are lacking. Ramps must not be placed inside of a stock car.

Loading Animals: In loading animals, the number of animals for each car will be told off, and each animal will be held by the halter by a soldier.

Two men will be placed inside the car, who will take the animals, lead them to the end of the car and tie them facing alternately to opposite sides of the car.

One man will stand by the loading ramp or chute, or by the door, if animals are loaded from platforms, and will call off in a loud tone of voice the number of the animals as "one, two, three, etc.," as each animal enters the car. There will also be posted near the door two men having a piece of rope or a strap to use as breeching, ready to pass around the rear of a balky animal and force him into the car.

When all is ready, the gate of the car will be thrown open and the file of animals moved into the car without halting. When the last animal has entered, as shown by the number called off, the gate will be shut. In order that there will be no delay in loading cars, the second detachment will be kept ready to load the next car. When platforms are convenient, several cars can be loaded at once. Animals should be so packed that they sustain each other when standing against bumps and sudden stops. In entering a car, an animal must be entirely inside before he is turned. On leaving, he must be athwart the car before he is led out. A quiet animal should lead in loading and a quiet animal be the last loaded as he will be the first to be unloaded. Loading and unloading must be done

quietly, so as not to excite the animals. Swearing or yelling at animals or jerking halters is strictly prohibited.

6. Light baggage (such articles as field desks, field ranges, etc.) immediately necessary on arrival at destination and such articles or personal and horse equipment as may be prescribed by each commanding officer is loaded in the baggage cars of each section. These cars should be placed so as to be readily accessible while train is in motion.

7. Mounted troops, before loading the horses, unsaddle and place saddles, blankets and bridles in gunny sacks, each tagged with the man's name and troop number, and load them in the baggage cars. The saddle bags are taken into the cars with the men. Horses are then loaded and details, if any, for their care sent to the animal section.

8. All baggage, freight and animals having been loaded, the command is formed, each organization opposite the cars it is to occupy. Companies, troops and batteries are marched into their cars and seats assigned by the captains; seats near the doors are assigned to sergeants.

Before leaving camp, the commanding officer of the troops to occupy each section makes the following details:

An Officer of the Day. A guard sufficient to furnish a noncommissioned officer in charge,

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and a relief, of one sentinel to each door, in each car.

9. Immediately upon receipt of notice of a movement by rail, the supply officer, or an officer detailed by the commanding officer, of each command will ascertain whether kitchen cars are to be furnished for the trip, whether cooking is to be done in baggage cars or whether travel rations and coffee money are to be furnished. He will make all arrangements for the operation of messes and for procuring the necessary supplies; as much beef (fresh) and bread as possible should be secured en route.

A mess officer will be detailed for each section and will report to the supply officer or other officer detailed by the commanding officer for instructions.

10. The following are the duties of different officers and guards, on receipt of orders for a movement by rail and while en route:

Commanding Officer: (a) Notify all officers of the movement, giving time of departure. (b) Assign to each staff officer such duties as pertain to his office, giving him all information at hand. (c) Notify all officers as to what baggage is to be loaded in box cars, in baggage cars or carried with the men in passenger cars, and what is to be turned in, and to whom it is to be turned in. (d) Detail the necessary officers and enlisted men to load headquarters property and the prop-

erty of the staff departments. (e) Assign organizations to sections of the train, if necessary. (f) His duty with reference to inspecting railroad equipment is defined in paragraph 2.

The Commander of each Section: (a) Assign a mess officer, if one not already assigned, and make necessary details and arrangements for the messing of the command. (b) Ascertain what guards are necessary and arrange for their detail. (c) Superintend the packing and loading of the property and animals pertaining to the troops in his section, assigning space in each car to each organization. (d) Duties with regard to inspection of the railroad equipment, prescribed in paragraph 2. (e) Issue orders for the conduct of the troops, while en route. (f) Make two (2) inspections each day to assure that his orders are being carried out.

The Officer of the Day: (a) Inspect each relief at least once each day and once each night to assure that sentinels know their orders and are enforcing them. (b) Report any breaches of orders that come to his notice to the commanding officer.

The Guard: (a) One noncommissioned officer and six privates for each car will be detailed each day for guard. (b) At every stop one sentinel will be posted at each door. His orders are: To allow no soldier to leave the car unless

orders have been issued permitting it. To allow no soldier to enter the car except those who have left it by proper authority. To allow no civilians to enter the car, except railroad employees on duty, or by authority of the commanding officer. (c) The noncommissioned officer in charge and the privates of the guard will enforce all orders and regulations prescribed.

The Company Commander: (a) As soon as orders for a move by rail are received, he will separate his property according to whether it is to be transported in box cars, baggage cars with the men, or turned in. (b) He will make details for packing the property for shipment, arranging for the packing of articles not in general use first. (c) He will make lists of all his property, giving weights of packages and such other data as the supply officer may require. (d) He will make arrangements for the messing and comfort of the men, unless these matters are arranged by higher authorty. (e) He will see that two (2) brooms are provided for each car to be occupied by his company, and that one whisk broom and one shoe cleaning outfit is in each squad before entering the cars. (f) He will superintend the loading of all his property and turn in such part of it as is ordered. (g) He will personally, with the assistance of his lieutenants, assign seats to the men as the company enters the cars and see that the entraining is carried on in an orderly

and expeditious manner. (h) En route, he will have the cars occupied by his company thoroughly policed after breakfast, dinner and supper, and as many other times a day as may be necessary. (i) He will inspect his company at least twice a day and assure himself that the cars are well policed, the men properly dressed, clothing brushed, shoes cleaned, and faces and hands washed, and that all regulations contained in paragraph 11 are strictly adhered to.

Lieutenants and Noncommissioned Officers: Assistants to the company, troop or battery commanders will carry out his orders and see that they are obeyed.

11. The following rules will govern the conduct of all troops moving on trains; all officers, noncommissioned officers and sentinels are charged with their enforcement:

(a) Except by authority of the commanding officer, no officer or enlisted man will leave the train at any stop for any purpose. (b) Where the length of a stop will permit, the men will be taken from the cars for exercise. In such cases, they will be marched by battalion or company for as much time as the circumstances justify. Assembly will be sounded five (5) minutes before the train is to start, and all detachments will at once board the train. Care will be exercised not to take commands too far from the train. (c) Special details to obtain provisions

or other necessities will be made by authority of the commanding officer only. (d) No officer or enlisted man will interfere with or engage in any altercation with any employee of the railroad. In case employees are neglectful of their duties, the fact will be reported to the company commander or other proper officer who will report to the commanding officer. (e) No unauthorized persons will be permitted to enter any cars. If such persons attempt to enter, they will be halted by sentinels and the noncommissioned officer on duty will at once report the matter to the officer of the day, who will investigate the case and take necessary action. (f) No one will be permitted to ride on platforms, roofs of cars or on engines. (g) No scuffling or rough play will be permitted. (h) No change of assignment of seats will be made except by company commanders. (i) The putting of heads, feet or arms out of the windows while trains are in motion is prohibited. (j) Throwing of food or spitting on floors and throwing of missiles in cars is prohibited. (k) Greatest care is enjoined to prevent damage to water coolers, wash basins, toilets or urinals. (l) No alcoholic liquors or other intoxicants will be allowed on troop trains. (m) Officers and men will at all times be properly uniformed. Sitting in undershirts with sleeves rolled up or without leggins is strictly prohibited. Clothing and hats will be brushed

and shoes and leggins cleaned as often as is necessary to maintain a cleanly, soldierly appearance at all times.

12. Upon arrival at destination, men will disembark with their arms and equipment and be formed in the vicinity of the cars.

The commanding officer or officer detailed by him will inspect all passenger coaches and stock cars, accompanied by a representative of the railroad, and list all damage caused by troops or animals while en route. A report of such damages will be made to the department commander of the department in which the command detrains.

Necessary details for unloading will be made, officers being placed in charge of all details. Unless cars can be unloaded simultaneously, the following order will govern: (a) Animals. (b) Wagons, trucks or other means of transportation, and artillery guns and carriages. (c) Light baggage. (d) Heavy baggage.

In case the camp to be occupied is near the point of detraining, troops may be marched to camp before unloading, a guard being left over the arms and equipment. Ordinarily, arms will be stacked and a guard placed over the stacks until the unloading is completed.

Appendix XVI

Suggestions for Training in Equitation

The security of the rider's seat and the possibility that he may easily use his aids require imperiously that his position on horseback possess certain qualities; and his appearance demands that his position be neither ridiculous nor constrained, but seem, on the contrary, elegant and easy. The rider should seek to give to his position, by hard work and long sustained attention, the qualities necessary.

The upper part of the body.—The head ought to be high and straight on shoulders falling naturally. The arms hang naturally near the body. The forearms have a direction such that the elbows are a little higher than the wrists. The latter ought to be held in their natural position, without being twisted around, in such manner that the back of the hand be turned outward, the line of the knuckles being vertical.

The small of the back should be convex and without stiffness in order to permit the suppleness indispensable to the weakening of the reaction of the gaits and of violent movements. This suppleness is in fact impossible if the small

of the back is hollowed; besides, if it is convex, the buttocks are of themselves pushed under the rider, which to him are indispensable in order to find the middle of his saddle and to have flexibility and cohesion with his horse; if he is placed otherwise, one says that he does not "sit down."

All the upper part of the body ought to be quite vertical at the walk and at the gallop; it may be inclined slightly forward when riding at the trot.

These qualities which have been enumerated pertain naturally, without any preparation, to all riders, without having to acquire them, and the position which results is taken by them themselves if it is not deranged by momentary contractions.

Now, these contractions are due to apprehension; if he does not fear to fall, the rider will maintain the position already indicated: it is no other in fact than that he himself takes when he is seated on a table or chair. Since now that position is natural, it is not necessary to supple the rider in order that he may take it; it suffices to cause the apprehension to disappear that he may *keep* it.

The effects of apprehension are not things that should astonish us: do we not find them always when we commence to devote ourselves to a physical exercise in which the equilibrium

is unstable—skating, bicycling, etc.? At first, one contracts and one falls; then, experience aiding, contractions disappear and the position becomes easy. One has not had for this to resort to special suppling exercises; it has sufficed that practice removes the apprehension.

It is the same in equitation; nothing is needed to supple the upper part of the body, and only that part is discussed at this moment, so that it may take a better position; it itself takes it if the fear of falling does not interfere. It is not then so necessary to supple these parts as it is to reassure the rider. The latter requires less time and is much more efficacious. One of the first concerns of the instructor ought to be then to remove all fear from the minds of the riders. This may be obtained by having them mount at the beginning only the horses not difficult to manage and having easy gaits. One may thus prevent the rider from becoming too occupied about the security of his seat by causing him to converse and to occupy his mind with other things, etc.

The thighs.—What has been said about the upper part of the body, that it places itself naturally in a good position if the rider does not contract, is no longer true with reference to the thighs, for their conformation does not permit them to take, once spread apart by the horse, the position they ought to have. Their fixity,

in fact, is not possible except as their bony parts are brought close to the saddle, without which the femur rolls on the muscular mass that is found between it and the saddle and which, moreover, raises the knee: one says then that the rider is "hooked up." In this position the thigh and the leg cannot take hold, cannot, one might say, *girth* the horse, that which is necessary, however, in resisting violent reactions.

In short, the articulation of the hip is such that if the rider leaves the thighs to place themselves naturally, the knee will not touch the saddle and the leg will not adhere to the horse more than at the upper part of the thigh and at the lower extremity of the calf. From that two inconveniences arise: first, the mobility of the surface adherent prevents all solidity; secondly, the calf being in contact with the horse at its lower extremity the spur will be used forcibly, the more so during somewhat violent reactions.

All these faults have their remedy in a suppling exercise called "rotation of the thighs," which at the same time brings the femur close to the saddle, permits the pressure of the knee, and causes it to descend and finally to turn inward. From that, fixity of the femur and of the knee, lowering of the heel, and carrying the spur at its normal distance from the side of the horse.

To execute the "rotation of the thigh," remove the thigh from contact with the saddle, carry back the knee and turn it, as well as the toe of the foot, inward, extend the leg and lastly draw the knee a little forward, pressing the thigh hard against the saddle in such manner as to press to the rear the muscles found on the interior. The knee being now in place, let the lower leg fall naturally, also the feet, and relax the small of the back if it has been hollowed, while carrying back the knee. The rotation of the thigh having been thus executed, the rider should force himself to maintain the thigh as long as possible in the position given it and preserve the small of the back relaxed. The movement is executed at the halt, then at the walk, the two legs alternately, and without stirrups.

This suppling exercise is excellent; but its rôle being to change a little the conformation of the rider, it must be repeated often and during a long time. It will not cease to be useful until, the articulation of the hip having been sufficiently accustomed and the interior muscles having been sufficiently pushed back, the thigh takes of itself a good position.

The legs.—It can be repeated for the legs and the feet what has been said of the upper part of the body: when the thigh is in a good position, there is nothing to do to assure that of one of the legs: one only has to let them fall naturally

by their proper weight, as well as the feet, by relaxing completely the knee and the ankle.

The position of the thighs and the legs is notably and rapidly improved if, together with frequent rotation of the thighs, the rider be induced to ride without stirrups at the slow trot and canter. The weight tends to cause the knees to descend naturally. This exercise is so excellent that it may be practiced advantageously even by riders already formed, to preserve the good position of their legs and to sit deep down in their saddles.

Schedule for instruction in equitation followed in the Brownsville district:

First day, one and one-half hours. (a.) Introductory remarks. (b.) Suppling exercises dismounted. (c.) Bridling, all students required to do same. (d.) Saddling, all students required to do same. (e.) Stand to horse. (f.) To lead out. (g.) To mount. (h.) To dismount. (i.) To take the reins in one hand and to separate them. (k.) Position of the trooper mounted. (l.) Elementary commands and their execution (on the circle or the rectangle). (m.) The aids (elementary). (n.) Criticisms of positions (at walk or trot). (o.) Walk back to rendezvous point. (p.) Short talk upon what care the horses should receive upon their return to camp.

Second day, one and one-half hours. (a.) Suppling exercises, dismounted. (b.) All stu-

dents required to bridle and saddle. (c.) Hasty review of "e" to "m," first day. (d.) To move forward. (e.) To halt. (f.) To turn to right or left. (g.) Walk, slow trot, trot (criticisms of positions). (h.) Posting.

Third day, one and one-half hours. (a.) All students required to bridle and cinch. (b.) Suppling exercises mounted. (c) Review of position of soldier; contact with horse's mouth; forward; halt; the forward movement. (d.) How to make horse leave ranks. (e.) Posting. (f.) Aids: Opening reins; bearing reins; direct rein; legs. How to regulate on the instructor when riding in a flock "cross-country." (g.) Cross-country exercise on varied ground.

Fourth day, one and one-half hours. (a.) The seat. (b.) The hands. (c.) The halt. (d.) The half halt. (e.) Then how to regulate on the instructor when riding in a flock "cross-country." (f.) A little cross-country work; through water; up and down fairly steep slopes. (g.) Explanation of benefit derived.

Fifth day, one and one-half hours. (a.) Work at will first ten minutes. (b.) Review that which seems not to be clear. (c.) To take the reins in either hand and in both hands. (d.) The "opening" or "leading" rein. (e.) The "bearing" rein. (f.) The direct rein. (g.) The legs. (h.) Work on the rectangle: (1) circles, (2) abouts, (3)

broken lines, (4) serpentines. (i.) Work at the gallop.

Sixth day, one and one-half hours. (a.) Suppling exercises mounted. (b.) Cross-country work (with short talk before and after upon how to control the horse in this work).

Seventh day, one and one-half hours. (a.) Suppling exercises mounted. (b.) The indirect rein of opposition in rear of the withers. (c.) The indirect rein of opposition in front of the withers. (d.) Passing corners. (e.) Changes of gait. (f.) Increasing and decreasing the gait. (g.) Work at the gallop. (h.) The walk, trot, and gallop and the extended walk, trot, and gallop.

Eighth day, dismounted, one and one-half hours. (a.) Lecture and conference. (b.) Suitable clothing. (c.) Care of leather and other equipment. (d.) Stable management. (e.) Conditioning. (f.) List of reference books.

Ninth day, one and one-half hours. Instruction ride to 4th Inf. corral for observation and conference upon stable management.

Tenth day, one and one-half hours. (a.) Hasty review of important points. (b.) Exercise on varied ground. (c.) Remarks upon completed work and work to follow.

Eleventh day, one and one-half hours. (a.) Increasing and decreasing the gait. (b.) The

extended walk. (c.) Work on the rectangle. (d.) The turn on the forehand. (e.) The about on the forehand. (f.) Posting (changing from one pair to diagonals to the other). (g.) Gallop cross-country. (h.) Up and down steep slopes.

Twelfth day, one and one-half hours. (a.) The gallop (false, true). (b.) To take the desired lead at the gallop (on the circle). (c.) Preliminary jumping (from small log on the ground to 2-foot brush jump).

Thirteenth day, one and one-half hours. (a.) Increasing and decreasing the gait. (b.) Harmony in use of aids. (c.) Passing corners. (d.) The turn (on the forehand and on the haunches). (e.) Shoulder in. (f.) Gallop on varied ground.

Fourteenth day, one and one-half hours. (a.) Increasing and decreasing gait. (b.) On two large circles: (1) Taking proper lead at the gallop. (2) Changing the lead by coming down to the trot and taking the 2d circle on the opposite hand at the gallop. (c.) Cross-country gallop (including jumps).

Fifteenth day, one and one-half hours. (a.) Increasing and decreasing the gait (up and down the scale from walk to gallop). (b.) Work on the rectangle; circle; abouts; half-turns; half-turns in reverse. (c.) Cross-country gallop. (d.) Slides.

Sixteenth day, one and one-half hours. (a.) One-half hour without stirrups: (1) Walk, trot, gallop. (2) Low jumps. (b.) Work on the rectangle (same as "B" 15th day). (c.) Exercise on varied ground.

Seventeenth day, one and one-half hours. (a.) Three-fourths hour without stirrups: (1) Exercise on varied ground. (2) Low jumps. (b.) Increasing and decreasing the gait. (c.) The extended walk and trot.

Eighteenth day, one and one-half hours. (a.) Three-fourths hour without stirrups: (1) On the large circle (suppling exercises). (2) Jumping. (b.) Exercise on varied ground. (c.) Slides.

Nineteenth day, one and one-half hours. Lecture and conference: (1) School of the Remount. (2) Shoeing.

Twentieth day, one and one-half hours. (a.) Exercise on varied ground (jumps, slides, water hazards). (b.) Remarks upon completed work and work to follow.

The above outline of training may be slightly varied according to progress from day to day.

Though not mentioned above, each day's work ended with at least two minutes at the walk.

Notes on Grooming

The physical condition of horses and mules depends first: on their feeding; second, on their grooming; third, on their general care.

Ordinarily, the grooming counts 20 per cent in the condition of a horse or mule.

As a rule each animal should be groomed for a few minutes before exercise, and for a half hour after exercise.

The active grooming should be strenuous, not carelessly done. In each infantry regiment there should be a fixed time for stables, and it should be attended by an officer detailed for the purpose.

The following method of grooming, as advocated and published by the Mounted Service School, will be used during the first two (2) weeks after the publication of this bulletin, in order to teach the details of grooming to enlisted men:

At the command "Commence grooming" each man brushes, and wipes off the legs of his horse from the knees down (2 minutes).

"Currycomb, left side." Take the currycomb and gently loosen dried mud or matted hair on fleshy parts of left side (2½ minutes).

"Brush head and neck." Start with the head and work back to include the shoulders and elbow joints. The weight of the man, stiff armed

and standing well away from the horse, should be put on the brush (2 minutes).

"Brush belly and back" (2 minutes).

"Brush croup and between the hind legs" (1½ minutes).

"Brush hind leg" (¾ minute).

"Brush fore leg" (¾ minute).

Total time for left side, about 11½ minutes.

"Wipe out eyes, nostrils and dock, and brush mane and tail" (3½ minutes).

"Clean feet" (1 minute).

Total time, 30 minutes.

Notes on Inspection of Horse and Mule Transportation

Numbers and General Information. The inspector will keep a table showing the number of animals on hand in the units whose mount or transportation he is charged with inspecting. He will also record all important data in connection with the effectiveness of these animals which can be obtained from their descriptive cards, such as age, weight, etc.

Shoeing. The inspector will be charged with the general inspection of the shoeing of these animals. He will keep informed as to the supplies on hand of horseshoeing material—shoes, nails, tools, etc., and the degree of training of the horseshoers.

Veterinary Care. The inspector will be charged with the inspection of the veterinary care given to these animals—whether the number of veterinaries is sufficient, what the proportion of animals on sick report is, etc., whether the medicine is sufficient in quantity.

Forage. Acting in connection with the officer of the Quartermaster Corps he will keep himself informed of the quality and quantity of forage issued.

Grooming. The inspector will keep himself informed of the appearance of animals. Opportunity will later present itself, especially during reviews of transportation. He will keep informed regarding the amount of grooming given animals.

Condition. The inspector will inform himself by observation of the hours per week of actual work requiring physical effort by the animals. This with a view to keeping all animals in hard condition for campaign. He will require that four animals per team are worked, not two.

Quantity, Material. The inspector will keep informed on the amount of material in the trains of his command, including wagons, harness, accessories, spare parts, etc. He will note all deficiencies under G. O. 39 W. D., 1916, and report them to these headquarters.

Appendix

Upkeep and Cleaning of Material. The inspector will note the markings on wagons, will keep informed of the frequency with which harness and packs are cleaned, and will report on the general upkeep of all material in the trains inspected by him.

Appendix XVII

Notes on the Training of Troops in the Great European War with Deductions Drawn Therefrom

Additional Training During the War. Due to lack of authority for representatives of the United States army to remain at the front with armies of belligerent nations, reports of steps taken to provide additional training during the war are few and incomplete.

Additional Training, German Troops. A camp for recruit training was established at Beverloo, Belgium, for a course of eight weeks' training, especially in firing and combat exercises, following preliminary training at home stations. Capacity of camp, 2,500 animals, 25,000 men. Similar depots for increased training in essentials of the character of warfare experienced were established throughout Germany, the course at each being eight weeks. Men were trained to fire from trenches and trees, practicing concealment. They were trained in construction of types of trenches.

Cavalry of the German army was trained to endure long marches rather than to charge, and

to accustom horses to bivouac in the open rather than rely upon stabling.

Field artillery were trained in construction of trenches and concealment from aerial observation.

Aviators were taught better cooperation with field artillery.

Candidates for appointment as second lieutenant are given practical training at the recruit depots above referred to.

Additional Training, French Troops. Independently of the student reserve officers, 200 noncommissioned officers of the active army were given special courses of training, April 6 to May 31, 1915, at St. Cyr, Maixent, Joinville, and Fontainebleau, to qualify for appointment as second lieutenants.

It is impracticable to ascertain how much training during the war is given men forwarded from regimental depots to replace casualties, but most if not all such received training in former years. This number is very large. The Seventy-ninth and One Hundred and Thirty-first Infantry to June, 1915 (10 months of war) each received 13,000 men in all to maintain its effective strength of 3,000.

Imagine the result if such proportion of untrained volunteers join an American regiment in war!

It was soon developed that the reconnaissance

service of cavalry was badly performed, infantry being surprised, as no warning was received from cavalry screen.

The marksmanship of infantry was poor, too little ammunition being allowed for instruction of recruits (120 rounds instead of 200 allowed in peace).

In September, 1915, the class, due in October, 1916, for compulsory service, assembled at depots for training.

During service at the front a French regiment of infantry or cavalry in the first line spends 3 days in trenches, 3 days in cantonment exposed to bombardment, and 6 days in quiet cantonment; then 12 days in the second line (reserve). Thus it has 3 days on the alert, 3 days in danger, and 18 days in security. Artillery, less tried by fire, are continually in action and not withdrawn to the rear for rest. Rest given infantry and cavalry is moral rather than physical. While in second line, 12 days at 15-kilometer march is had each day, and company battalion, or regimental maneuvers. Bayonet fencing, throwing petards, reversing parapets of trenches, crawling, running, target practice, machine-gun practice, etc., utilize entire period in second line. One-half the French army drills while the other half guards the trenches.

French infantry is trained to organize and carry out the assault of three lines of trenches

constructed in rear of their positions to resemble the German trenches in their front and on terrain similar to that in their front. Men are trained to rush 100 kilometers and lunge at figures dressed as German soldiers in the trenches used for assault training.

Additional Training, Canadian Troops. Although the Canadian contingent had had some training before sailing, the first expedition (31,250 men) was sent to camp at Salisbury Plain for six months' additional training. One regiment (Princess Patricia's) was given only two months in England and two months in France before being placed in the trenches in February, 1915. It was composed largely of men with previous service in the regular army or South Africa.

Other than this regiment the personnel and training of the Canadians is said to have been inferior to the territorial force.

The first Canadian division was sent to France after four and one-half months' training at Salisbury Plain. The second division was not sent to France until September, 1915. These two divisions, with authorized strength of 40,000 men, have met heavy casualties, and as selected men are transferred to them to replace losses, it represents the strength which Canada can maintain in the field in view of preliminary training given in Canada and supplementary training

in England and France before troops with no previous training can be safely employed at the front. Such strength was not reached at the front until after 14 months of war.

British Cadet School in the Field. In January, 1915, to replenish the corps of officers, sadly depleted since August, 1914, Field Marshal Sir John French, commander in chief of the British forces in the field, established a school for training officers at Blendecques near St. Omer, France. Cadets are selected from enlisted men of educational, physical, and moral qualities, who have been tested as good field soldiers in actual campaign. The course, which lasts one month, is one of demonstration and practice coupled with a minimum of theory. Each cadet passes 48 hours in the trenches and visits observation posts of a battery or group of batteries, submitting report of his tour. Machine-gun tactics is an important subject of instruction. Among others are range finding, siting and construction of trenches, sapping, sketching, night operations, use of rifle and hand grenades, cooperation of infantry, artillery, engineers, etc. The capacity is 105 cadets, that number being graduated each month. Graduates have been favorably reported by divisional and corps commanders. The Artists' Rifles (Twenty-eighth Battalion, London regiment) was utilized as the basis for this training corps for officers in the field.

Appendix

British Machine-gun School in the Field. A school for training the increased personnel employed with machine guns, the number of which guns with field units was doubled, was established at Wisques, near St. Omer, France, under an enthusiastic musketry officer. The course, which lasts two weeks, consists of improvising positions and gun shelter, oblique or enfilade fire, firing from behind houses through openings in walls, or from within houses and cellars through openings in the roofs, firing from armored motor cars and aeroplanes, etc.

Practical Experience for Higher Unit Commanders. It is reported that regimental and battalion commanders of the expeditionary forces still training in Great Britain were sent to France in relays for a week's experience and training at the front, that on returning they might make the training of their proper commands more practical and appropriate to the service anticipated when such commands reach the front.

British Central Training Camp at Havre. In the summer of 1915 a camp was established near the base at Havre for the supplementary training of men arriving from England and considered deficient in the essentials of infantry training. All men passing the camp were subjected to "tests," and not permitted to go to the front until found proficient by the commandant,

Major H. F. Whinney, Royal Fusiliers. Instructors are experienced officers and noncommissioned officers recently returned from active service in the trenches, some of them recuperating from wounds or sickness. In addition a very good officer is selected from each division at the front and detailed for a tour of two months as instructor. This maintains instruction in pace with the evolution of the peculiar conditions of warfare which characterize the struggle in France. The course includes musketry, intrenching, first aid, pack-saddlery, bayonet fencing, bombing, revetting, construction of obstacles, particularly barbed-wire entanglements, machine-gun practice, the disabling of guns, and conduct of artillery fire. Lectures and practical instruction are given groups of officers and men, at times to as many as 300 in a group or class. All are impressed with the idea that their lives may depend upon following the advice given. Subjects are so practical, and the necessity for knowledge is so vital, the hour so solemn, and lecturers men who have learned by wounds and bitter experience in action what to avoid, that there is no lack of interest or attention. In musketry targets represent German helmets barely visible over a parapet, bobbing up over a front of several hundred yards. Men are taught the character of trees and houses in the landscape, so as readily to recognize aiming points and division lines

between sectors. They are taught the distinction between cover from view and cover from fire. Trenches of patterns found best at the front are built, faced by trenches similar to those used by the Germans. Men under instruction occupy these trenches 24 hours to test their knowledge of what they have been taught in lectures. Men are taught to throw dummy bombs from a narrow fire trench into trenches in front and to advance in specified formations of small groups or squads, clearing "pockets" between traverses of any hostile occupants by "lobbing" bombs into such pockets. They are taught to hurl live bombs and shown how to avoid accidents, relieving men in fire trenches, formations for assault, bringing up supports, attacking "hostile" trenches occupied by dummy "Germans" which must be bayoneted or bombed, use of respirators to avoid effects of gas, positions taken in trenches when aeroplanes are sighted, use of trench sprayers to negative effects of gas that has been thrown by "Germans," are interesting and practical exercises undertaken. They represent the last word in practical infantry training for the character of warfare peculiar to the situation in northeastern France.

Deductions. (*a*) The time devoted in peace to training in all other countries exceeds that given all British forces, excepting possibly the British regular army, which constituted at

the outbreak of the war the only British force fit for service on the Continent, and compared with strength of the new army was very small. It included many men of several years' training, reenlisted and professional soldiers, and its service in August and September, 1914, demonstrated the value of troops thoroughly trained and habituated to discipline. But its casualties, fighting against odds, were very heavy.

(*b*) All other British troops, excepting possibly those from Australia, required from six to nine months' training, after organization, regardless of previous training, before they were considered fit for service at the front. No reports have been received to indicate whether Australian troops required more training than had been received under the compulsory training required by the defense act. It is probable that such additional training was necessary and was given in camps in Egypt before such troops were sent to the Dardanelles in the spring of 1915.

(*c*) Casualties in the ranks of units from countries having compulsory training were replaced by men of reserve forces, variously designated, who had training in peace. Casualties in British and Canadian units had to be replaced by men with no training in peace, and the preparation of such men required at least six months' intensive training in Great Britain, after which many were found unfit and were given supple-

mentary training in France before joining units at the front.

(*d*) The proportion of the British regular and territorial forces to the population of Great Britain and Canada being greater than that of the regular army and organized militia of the United States, to the population of the United States, a greater percentage of British citizens than of United States citizens had received some military training before the war commenced, and the amount of such training in the territorial forces was greater than in the organized militia of the United States.

Application to Situation in the United States. (*a*) If imminence of war should warrant mobilization of the United States land forces, it is obvious that only the regular army and such of the army reserve as have very recently served in the regular army can be considered ready at once for active field service against a force from any country now at war, including the British new army thus far sent to the Continent.

(*b*) The United States has now no adequate method of supplying properly trained men to replace casualties in the ranks of the regular army or to compose the ranks of the large number of combatant units required in addition to the existing mobile regular troops to resist invasion.

(*c*) The experience of the British with the new army confirms the estimate in paragraph 42 of "A Statement of a Proper Military Policy" (W C D 9053-90) that—

"Twelve months' intensive training is the minimum that will prepare troops for war service. Therefore the 500,000 partly trained troops above referred to require nine months' military training before war begins."

(*d*) Conditions of modern war do not afford time to train an army after war becomes imminent. Not only must material be secured, but personnel must be trained before military operations can be undertaken with any hope of success.

Appendix XVIII

Training for Trench Warfare

There is sometimes a tendency to reach the hasty conclusion that the training of the soldier for trench warfare means chiefly or solely the digging of ditches and the construction of an aggregation of defensive works of various types and patterns, and to look upon such work as a wearisome, monotonous and uninteresting task, drudgery that the man wielding the pick and shovel can hardly see the reason for.

It is true that in actual war the trench is the basic element of defensive works in the field, miles and miles must be dug, immense labor is required and thousands of men will work untiringly but under the spur of necessity and knowledge that what they are doing is a measure of self-preservation.

The soldier's duty in time of peace is not so much to toil and dig as to learn how to do the work and to use his labor effectively, to obtain results commensurate with the energy expended. It is not intended to argue that the construction of trenches and intrenched positions in the field should not be included as part of the peace

training of a soldier, but only to emphasize the fact that the profile and construction of field works are simple matters compared with their correct location and proper tactical use and to suggest that the time devoted to the actual construction of field works be proportioned intelligently to that devoted to elementary instruction in the general principles of the subject and to subsequent utilization of the constructed works, including attack and defense, maneuvers, occupancy of the trenches in all sorts of weather, nightwork, etc.

A man is quick to improve his condition in regard to protection and comfort when he learns what is needed. His mind is at least as useful as his body and its training must not be forgotten. Therefore teach the soldier what all these devices described in the manuals and pocket books are for; let him build and try out the most approved types; he will then learn to adapt himself to the effective use of the devices, to grasp the essential features, to eliminate the nonessential, to make improvements, to absorb the idea, and to impart his knowledge to others.

Another point to be well considered by those charged with the soldier's training is that a man does not learn anything unless he is first interested, and the progress of the instruction given must keep this constantly in view.

Appendix

Military training in time of peace is handicapped by the fact that much of it must be carried on in the light of theory alone without daily practice to test out the theories under service conditions. The practical lessons of a war soon become out of date due to improvements in weapons and other material of war and the resultant changes in tactical ideas. It is difficult to predict the precise effect of improved weapons and the improved training of other nations who may possibly become our opponents in armed conflict. Theoretical views may be wrong. The best we can do is to keep clearly in mind the fundamental object to be attained, to note from each great war how this object was achieved under varying conditions and to try to apply and adapt the principles to the present need.

The above remarks apply in large measure to all kinds of military training.

For trench warfare it is believed that the training may well begin with the use of topographical maps and models of field works and intrenched positions and with the construction of relief maps in a simple fashion to teach the significance of the shape of the ground and the method of utilizing natural features, hills, valleys, ridges, woods, etc., to secure cover and concealment. The meaning of the common terms, sky line, military crest, reverse slope, etc.,

should be understood by all in some degree, and very thoroughly by those who may have the duty of selecting or laying out the lines to be occupied by trenches or other field works.

The construction, then, of miniature trenches and parapets in sand built quite accurately to scale, with all the accessories such as revetments, overhead cover, obstacles, etc., seems to be a very good way to arouse the interest of the soldier and to give him the elementary instruction as to dimensions, slopes, directions, and relative position of the component parts of an intrenched position. The sand table can also carry the instruction in topography one step further by allowing the building to scale of the hills, stream beds, roads, and railroads, and the representation of wooded, cleared and cultivated areas. In the employment of artificial features in the miniature landscape it is believed to be highly desirable to construct them all to the same horizontal scale as that of the trenches and topography in order that the idea of correct proportion may be acquired.

A proper sense of proportion is important in all occupations and is one of the most valuable things that a soldier or an officer can carry around in his head ready to apply it instantly to the case at hand. It is realized that it is nearly always necessary to exaggerate the vertical scale of relief models showing extensive

tracts, but the horizontal scale may usually be adhered to for all features.

Extensive positions can be laid out on the sand table and profitable instruction given to officers and noncommissioned officers as well as to the private soldier.

This training by maps and models must not be carried too far; it is only a means to an end, and the details must not be allowed to obscure the main object in view, namely, to apply these principles to the actual ground.

The next step should be the construction of full-sized trenches and all accessories. If this has to be done by troops in small isolated bodies the work may have to be limited to practice in the mere mechanical handling of the full-sized elements, the tools, the obstacles, different kinds of revetment, and the like. In view of the proposed subsequent use of the intrenchments, it would be better to have the work done by troops assembled in large bodies that could then be used in maneuvers and in the occupancy of the trenches, including further training in all the active duties of the attack and defense of field works.

The last idea involves, perhaps, the construction of an intrenched camp, in which all the operations and details of life in the trenches could be simulated. Field fortifications are constructed with a view to giving a cover that will

diminish losses, but they must be so built and placed that they will not interfere with the free use of the rifle. Fire effect is the first consideration.

Major Sydenham Clark, R. E. (1890) says:

"Organization, capable commanders, efficient armament, adequate supplies, matured preparations, well-arranged communications — these things constitute the essence of defense; these determine the resisting power of land fortifications. Within broad limits the details of design are of relatively small account."

Fire effect and organization may be said to include in a broad sense all that is to be secured by training.

To quote from a French source:

"Warfare of the kind the enemy forces us to wage includes at present as its chief occupation the construction and defense of an uninterrupted line of intrenchments from the North Sea to Alsace. The present form of warfare appears not to have been foreseen by those who for forty-four years have commanded our army, and that element officially known in the infantry maneuver book as field fortifications has, with rare exceptions, received but scant attention from our corps and detachment chiefs. On the contrary, in many garrisons, gymnastics and open-air games have been in great favor, and certain unkind persons have sometimes asked

themselves if our military chiefs have not lost sight of the great principle that in time of peace the soldiers are taken away from their civil occupations to learn to fight rather than to learn to play at leapfrog.

"All of us know the terrible consequences of these mistakes which plain common sense should have condemned. When in the early days of the war we found ourselves in the presence of an army which had not devoted several afternoons a week to hurdle games, but which knew marvelously well how to shelter itself behind the least fold of the ground and to hide itself in holes rapidly dug, we suffered enormous losses."

The tendency in the European war zones where the new trench warfare has reached its greatest development is shown by the character of training that is being given or is recommended for the new armies that are being steadily prepared for duty at the front. The ideas acquired are briefly outlined as follows:

1. The range and accuracy of modern field artillery is so great that the fundamental principle of selecting infantry positions has changed since the outbreak of the present war.

2. The modern infantry should be trained first to be dead shots at 200 or 300 yards, and should be able to fire as rapidly at these ranges as the conditions of accurate and individual aim permit.

3. *Concealment* is now the fundamental consideration in posting infantry, simply because the moment a line of hasty trenches is seen it can be made untenable by high-explosive shell.

4. In selecting a line for intrenchments the infantry commander now places this line from 100 to 200 yards behind the crest, thus sacrificing long-range field of fire, instead of just beyond the crest as heretofore taught in the drill book.

Armies now in training in the British camps are being instructed in trench digging and in small-arms practice in accordance with the principles noted above by selected officers returned from the front. The new conditions point to the adoption of some form of automatic or semiautomatic rifle in order to increase the density of fire over the relatively narrow field of fire. The use of machine guns has already been greatly increased with the same object in view.

An enumeration of the duties in which troops must be trained will include the following:

1. Musketry; bayonet fencing; manufacture and throwing of bombs; machine-gun practice.

2. Hasty and deliberate intrenchment including:

Firing trenches; traverses and parados; head cover; overhead cover; machine-gun emplacements; loopholes.

Shelter and cover trenches; cover at firing point for personnel, for ammunition, supplies, stores, etc.; cover behind firing point; shelters for supports and reserves; dressing stations; splinter proofs and bombproofs.

Concealment; use of natural cover; use of dummy field works; dissimulation, screening and masking of earthworks.

Communications; constructing forward communications; advance by covered approaches; sapping; parallels; passage trenches from the rear or along the rear; trenches to lookout men and listening posts.

Mining and countermining; occupation and organization of a crater for defense and further advance.

Signboards; systematic numbering and naming of all avenues, shelters and underground stations; guideposts to reserve ammunition and all important stations; arrangements to illuminate signboards and to provide warning and directing lights.

Revetment of all kinds.

Preparation and improvement of the foreground; clearing; range marks; obstacles; inundations; wire nets; alarm signals; barricades.

3. Residence in the trenches. First aid and sanitation; drainage; latrines; heating of trenches;

sleeping accommodations; care of arms and ammunition; care of shoes, clothing, and bedding; personal cleanliness and care of the feet; preparation and supply of food; methods for elimination of pests.

4. Attack and defense of works. Marching through approach and communicating trenches; troop leading in trenches; reenforcement of firing trench; movements by night in attack and defense; advance to the assault; reversal of parapets of enemy trenches and organizing them for defense; illumination of field of fire.

5. Defense against gas, liquid fire, inflammable liquids, etc.

6. Observation. Accurate and rapid reconnaissance from front-line trenches; instruction as to the importance of every topographical feature and to the use that may be made of same by friend or enemy; practice in interpreting features of the enemy's position, as machine-gun emplacements, loopholes, dummy works; sharp lookout by day and night; special precautions against night attacks; use of telephone throughout intrenched position.

7. Use of trench mortars.

8. Practice with hand grenades and rifle grenades in the assault and the defense.

9. Care and use of high explosives.

10. Airplane control of artillery fire; this may be done by exploding ground mines beyond and

short of the intrenched positions the airplane signaling the position of the assumed bursting shell.

11. Practice with antiaircraft guns against free balloons.

Concealment is of prime importance for batteries and for infantry trenches. Advances in the open are impossible and advances even where there is some cover are so difficult in the day light that the cover of darkness or of smoke must be used more and more. Ground gained by short advances must be rapidly intrenched and connected up with the trenches in rear by winding approaches. In the close stages of an advance the only possible methods seem to be by blinded sap or mine galleries driven just below the surface of the ground. Mines are used also extensively to form craters, destroying the defender's trenches and offering a temporary cover for the attacker if he rushes forward immediately after the explosion of the mine, taking advantage of the confusion, destruction and of the cover to be found in the crater. The accurate and overwhelming artillery preparation with high-angle fire and high-explosive shell is still an indispensable preliminary to an infantry advance on hostile trenches with the object of destroying the obstacles, washing away the earthworks, and shaking the morale of the defending troops.

It is commonly related that the war in the west has become a stupendous siege, and that the operations of formal sieges are being reproduced to a certain extent; we hear of local combats by trench, sap, mine, and assault for ridges and hilltops important for observation; of tactical wedges driven by one side or the other into a weak section of the enemy's line, and frequently of the rebound of the wedge when the enemy's lines on either side of the pierced section squeeze in and press back the isolated attack. But how do they go about a great attack intended to gain a strategical success and to drive back the enemy into his territory? An outline of the French offensive in Champagne in August and September, 1915, may give us some ideas on this subject.

An assault to be successful under the conditions existing on the western front must be made along a wide front of 20 or 30 or 40 miles; otherwise a local break only will be made and the flanks of the attacking force will soon be exposed and rolled up by the converging masses of the enemy who can afford to shift his troops to meet a local effort.

In the first place the conditions are such that the trenches have been pushed forward so as to get as close to the enemy as possible, so that in some places the front-line firing trenches are less than 250 yards from the enemy's front line.

In certain special cases these lines have approached as close as 10 yards.

It is considered important to instruct all arms for infantry work under emergencies, where in hand-to-hand combats of a nature not previously anticipated for their arms their lives may depend on a knowledge of at least elementary instruction in the duties of the infantry soldier.

To illustrate the details of the instruction required the following description has been compiled from notes on a training camp conducted by one of the European belligerents for new levies destined to duty in the trenches of the western front.

Method of Attacking Trenches

The defense has steadily increased in power due to its small-arms fire, its obstacles, and its artillery. This is the first great war fought on European soil with the magazine rifle and smokeless powder and with powerful modern artillery. A frontal attack on trenches held by well-trained unshaken infantry seems more impossible than ever before. Heretofore when such a condition existed the alternative for the attacking force was to maneuver around the flank of the defending force, but where there are no flanks to turn, as in an all-round position like a fortified town or fortress, or in a position like that on the western European war front

where the entire frontier from the sea to the mountain ranges of a neutral state is heavily intrenched, we naturally ask ourselves what is the best and most scientific method of making the attack? Captain Thuillier, R. E., writing in 1902 after the Boer War and assuming conditions like those just described, remarks:

"At all events, though it is impossible to forecast in detail the form of attack we may at least assume that as a rule the combat on both sides would be largely one of pick and shovel, trenches and countertrenches, mines and countermines."

The artillery bombardment which may be taken up for weeks before the day of assault consists of a deluge of high-explosive shells and shrapnel delivered day after day and sometimes continuously night and day.

The section of the line attacked consists of two main positions, roughly parallel, and from 2 to 2½ miles apart. The first line is extremely dense and consists of from three to five parallel trenches, and for lateral deefnse a network of defense and communication trenches. The first line is about 400 yards deep, and between the several trenches are broad areas of barbed-wire net some 60 to 70 yards deep.

The second defensive line consists mainly of a single trench with a few support trenches. It is located on the reverse side of a hill crest, the

upper front slopes of which are under observation and are held only by machine guns, outposts, and artillery observers who communicate with the trench in rear by tunnels through the crest of the ridge.

The entire two miles behind the front position is fortified into a net work of trenches in all directions, studded with machine guns in concealed emplacements, and obstructed by barbed-wire entanglements, some of it in deep pits 70 yards square and 6 or 7 feet deep. These are almost invisible to airplanes, and the formidable nature of the position in rear of the front trench is not known to the attackers until they have swept beyond the first line.

The object of the artillery bombardment of the front line is to destroy the barbed-wire net, to level down the trenches and concealed emplacements, to cave in the shelters and dugouts over their occupants, to block up communication trenches, and to demoralize the enemy. Long-range artillery meanwhile bombarded depots, communications, camps, and transport columns in rear of the lines in order to impede and interrupt the supply of food and ammunition to the enemy's fighting units.

The duty expected of the artillery is to flatten the trenches and parapets, to plow up the dugouts and subterranean defenses so completely that it will be almost possible for the attacking

infantry to march to the assault with their rifles at the shoulder.

To quote from the London "Times's" "History and Encyclopædia of the War":

"When reveille sounded at 5.30 on the morning of the great day, September 25, those who had slept through the din of gunfire awoke to a world of gloom. Clouds heavy with rain swept low across the gray chalky landscape.

"Between 6 and 6.30 the morning coffee was drunk . . . and then, conversation being impossible, the men squatted down by the trench wall and smoked and thought of what the day might bring forth.

"Under a pouring rainstorm which broke at nine o'clock, in a few brief phrases the general situation and the general scheme of operations of the day were set before the men. Then by the time given by wireless to the army from the Eiffel Tower the fuses of the artillery from behind were lengthened and the officers scrambled out of the advanced parallels with a last shout of "En avant, mes enfants" to the men. . . . The great offensive of 1915 had begun, and all those who took part in it are agreed that no moment of the battle was so thrilling, so soul-stirring and impressive as that which saw the first wave of Frenchmen in blue uniforms, blue Adrian steel helmets, with drums of grenades hanging at their waists, burst from the trenches in which

they had remained hidden for so many months and strike across the intervening No-Man's-Land for the enemy's lines.

"The first waves of the assault had about 250 yards to cross to reach the enemy's trenches, and such was the impetuosity and dash of the men, and so complete had been the work of the artillery that by noon the first line along the entire front had been taken. At some points the assaulting waves passed over the first line and into the enemy's position, but sooner or later they came to a halt as resistance was developed, machine guns were unmasked by the enemy, and their artillery again put to work. At one place the center was held up by four machine guns which had escaped destruction by the artillery."

The official communiqué of September 26 thus sums up the day's operations:

"In Champagne obstinate engagements have occurred along the whole front. Our troops have penetrated the German lines on a front of 25 kilometers to a depth varying between 1 and 4 kilometers and they have maintained during the night all the positions gained."

Many prisoners were taken. The first day's work was considered successful. The two ends of the line had resisted the assaults upon them, but the attacking troops had held on with tenacity and kept a large force of the enemy occupied, thus relieving pressure at the center.

But here the resistance and obstacles that finally brought the entire movement to a standstill were causing delay at certain points.

The second line of works behind the hill crest was practically intact, having suffered very little from the artillery bombardment.

Details of further operations here are not now available, but the great offensive had come to halt and had failed to make an effectual break through the opposing front. The period of preparation, the mapping, the airplane combats, the artillery duel, and the assault had taken the attackers just so far, where, encountering ever-increasing resistance, they had come to a halt, and again were compelled to resume the defensive until driven back or until more elaborate preparations over a wider front or under more favorable circumstances would permit another rush into the enemy's lines with momentum that would finally carry the day and achieve a strategic success by making the enemy withdraw along his whole front.

In theory high-explosive shell poured in sufficient quantities upon the enemy's positions destroys all semblance of trenches and levels the deep-dug line with the rest of the country. It is stated that in the five weeks which preceded the assault described above on no fewer than twenty-five days the hostile front was violently bombarded and on the last three days the artillery

worked without ceasing day and night. The results we have seen. The first line was taken, but the second line held; perhaps if the second line had fallen a third would have checked the attack. Perhaps if the artillery had worked fifty days they might have destroyed the rear lines, but always until utter demoralization or exhaustion of supplies or ammunition had overtaken the defending troops would the attackers have found trenches, obstacles, machine guns, artillery, and men in successive lines ready to repel them.

Operations like those described bring a tremendous strain on the defenders and demoralization may often be not far away. It may be that if the trenches are sufficiently "washed away" over a wide enough front and in depth over first, second and third lines, not omitting the ground in rear, and the deluge of steel and chemicals kept up until the strain on the men becomes unbearable, one line or the other will break and a victory be achieved. The magnitude of the preparations to accomplish this end cannot be estimated.

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